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DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEARS 1988 AND 1989

HEARINGS

BEFORE THE

COMMITTEE ON ARMED SERVICES
UNITED STATES SENATE

ONE HUNDREDTH CONGRESS

FIRST SESSION

ON

S. 1174

AUTHORIZING APPROPRIATIONS FOR FISCAL YEARS 1988 AND 1989 FOR MILITARY ACTIVITIES OF THE DEPARTMENT OF DEFENSE, FOR MILITARY CONSTRUCTION, AND FOR DEFENSE ACTIVITIES OF THE DEPARTMENT OF ENERGY, TO PRESCRIBE PERSONNEL STRENGTHS FOR SUCH FISCAL YEARS FOR THE ARMED FORCES, AND FOR OTHER PURPOSES

PART 6

JOINT HEARINGS
CONVENTIONAL FORCES AND ALLIANCE DEFENSE
AND
PROJECTION FORCES AND REGIONAL DEFENSE

MARCH 12, 24, 26; APRIL 7, 1987

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DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEARS 1988 AND 1989

THURSDAY, MARCH 12, 1987

U.S. SENATE, SUBCOMMITTEE ON CONVENTIONAL FORCES AND ALLIANCE DEFENSE, SUBCOMMITTEE ON PROJECTION FORCES AND REGIONAL DEFENSE, COMMITTEE ON ARMED SERVICES,
Washington, DC.

AIRCRAFT CARRIER REPLACEMENT PROGRAM

The subcommittee met in open session, pursuant to notice, at 2:29 p.m., in room SD-628, Dirksen Senate Office Building, Senator Edward M. Kennedy (chairman) Subcommittee on Projection Forces and Regional Defense, presiding.

Present: Senators Kennedy, Nunn, Levin [chairman, Subcommittee on Conventional Forces and Alliance Defense], Exon, Dixon, Glenn, Gore, Shelby, Warner, Thurmond, Humphrey, Cohen, Quayle, Symms, and McCain.

Staff present: Carl M. Smith, staff director for the minority; Romie L. Brownlee, deputy minority staff director; and Andrew S. Effron, counsel; Robert G. Bell, John J. Hamre, George K. Johnson, Jr., Ronald P. Kelly, James R. Locher III, Norman G. Mosher, Gordon G. Riggle, Mark B. Robinson, and Daniel J. Wildfong, professional staff members; Russell C. Miller, research assistant; Lori M. Jackson and Debra A. Rice, staff assistants.

Also present: Francis J. Sullivan, assistant to Senator Stennis; Jeffrey B. Subko, assistant to Senator Exon; Greg Weaver, assistant to Senator Levin; Gregory B. Craig and Bill Lynn, assistants to Senator Kennedy; Charles C. Smith, assistant to Senator Dixon; Milton D. Beach and Donald A. Mitchell, assistants to Senator Glenn; Leon Fuerth, assistant to Senator Gore; Jeff Hyche, assistant to Senator Shelby; William J. Wight, assistant to Senator Warner; Dale F. Gerry, assistant to Senator Cohen; Henry D. Sokolski, assistant to Senator Quayle; Jay L. Kriss, assistant to Senator Wilson; Alan Ptak, assistant to Senator Gramm; Samuel J. Routson, assistant to Senator Symms; and Lorne Craner, assistant to Senator McCain.

OPENING STATEMENT OF SENATOR EDWARD M. KENNEDY, CHAIRMAN

Senator KENNEDY. We will come to order.

I want to express my appreciation to our witnesses for accommodating the changes in the program and the scheduling. There were other hearings that went on very late during the course of the morning period, and it was impossible for some of us to make the time at 2 o'clock.

But I am particularly grateful. We had to adjust the scheduling of the witnesses as well, and I am thankful that we were able to have your patience.

This afternoon's hearing is on the Navy's proposal for the early replacement of two aircraft carriers. Given the current fiscal climate, this proposal will be one of the most controversial defense issues confronting the Congress this year.

This is the first of two joint hearings by the Subcommittee on Projection Forces and Regional Defense and the Subcommittee on Conventional Forces and Alliance Defense. Aircraft carriers play important roles in military missions under the jurisdiction of both subcommittees and we are sharing review of the aircraft carrier program.

The Navy's proposal to accelerate modernization of the carrier force through the early replacement of two aging aircraft carriers is a sudden, controversial development. Last year's 5-year ship building plan did not include new carrier construction. In fact, the Navy previously did not plan to fund these two replacement carriers until fiscal years 1994 and 1996.

Under the new accelerated modernization plan, the first carrier would be procured in 1990 and the second in 1993. To accommodate this schedule, long lead funding is requested in 1988 and 1989.

In essence, Congress is being asked this year in a 2-year defense budget to commit to the early replacement of two carriers. There are obvious questions about such a proposal.

First, is a force of 15 aircraft carriers consistent with the priorities of our military strategy? In a period of shrinking defense budgets, we need to re-evaluate how much of our resources can be devoted to maritime capabilities and how much of that proportion should go to aircraft carriers.

The crucial question in our debate about the carriers is also the crucial question in our debate about the entire defense budget: Is this the best way to spend the money? Should we over the next 6 years, spend $7 billion for two new aircraft carriers or, assuming we are going to spend this money on defense, is there a better way to do it, in the Army, the Air Force, or the Marine Corps, in security assistance, or in some other program in the Navy, like sealift or submarines?

Congress must decide whether a dollar spent on an aircraft carrier today is a dollar well spent 20 years from today. Is the pace of modern technology such that the aircraft carrier is on the verge of becoming the biggest and most expensive white elephant in world history?

Second, will the new proposal unbalance the Navy's program by taking from other important needs, especially at a time when defense spending levels may be reduced below current projections?

Admiral Crowe, the Chairman of the Joint Chiefs of Staff, has raised these points in a memorandum to the Deputy Secretary of

Defense in October of last year. Speaking about the carrier replacement program, Admiral Crowe stated:

> Given current pressures to minimize real growth in the defense budget, the question becomes one of whether the Navy has sufficient funds to execute the proposed program without taking money away from other high priority programs and mission areas.

To which Admiral Crowe added:

> The simple fact is that in a fiscal climate more austere than currently planned, the carrier priority may not be as high as it is today. For example, when painful choices have to be made, I would give first priority to sustainability, modern munitions, ASW, and the SSN program.

I made a copy of Admiral Crowe's memorandum available to all committee members, and I will make it a part of the record of this hearing.

[The memo referred to follows:]

Office of the Chairman,
The Joint Chiefs of Staff,
Washington, DC, 14 October 1986.

Memorandum for the Deputy Secretary of Defense.
Subject: Accelerated CVN Acquisition.

1. I have examined Secretary Lehman's proposal to accelerate aircraft carrier acquisition from 1994 and 1996 to 1990 and 1992, and I agree that the early two-ship procurement strategy could pay dividends for carrier modernization. From a pure business standpoint the proposal appears sound; however, it would be very difficult to accommodate the early funding given our current fiscal limitations.

2. The $6.2 billion offset identified by Secretary Lehman is overshadowed by the impending DOD Total Obligational Authority (TOA) reductions. Given current pressures to minimize real growth in Defense budgets, the question becomes one of whether the Navy will have sufficient funds to execute the proposed program without taking money away from other high priority programs or mission areas. Even if the mood of the nation changes to support renewed growth over the next few years, sustained three percent real growth is optimistic. In fact, I think it would be unwise to plan on more than one percent real growth. One percent real growth would require the Navy to cut $74 billion from its current BES position in addition to the $6.2 billion identified offset. Before agreeing to accelerating CVN procurement, it would appear advisable to know more about the larger picture.

3. My overriding concern is to maintain our full spectrum of warfighting capabilities at credible, survivable, and sustainable levels in the near term. I fully support a strong carrier program within the context of a balanced force capability but also one that is affordable within projected Navy budgets. In other words, it is important, in addition to the $6.2 billion offset, to know how the Navy intends to meet a projected one percent real growth curve overall. The simple fact is that in a fiscal climate more austere than currently planned the carrier priority may not be as high as it is today. For example, when painful choices have to be made, I would give first priority to sustainability, modern munitions, ASW, and the SSN program. In essence, I believe we need to see the full spectrum of the Navy's programs before making a decision that will lock us into a long-term major commitment. Under no circumstances would I like to see a decision made that would fence the Navy's TOA, vis-a-vis the other Services, in order to provide an accelerated carrier schedule.

William J. Crowe, Jr.,
Chairman, Joint Chiefs of Staff.

Senator **Kennedy**. The third major issue is the economics of earlier carrier replacement. The Navy claims that $3 billion could be saved, but the calculations have been increasingly questioned. What is the potential saving? Do they justify the displacement of other programs to pay for earlier carrier procurement?

At today's hearings we have two panels of witnesses. The first is composed of three experts on maritime issues. On behalf of both subcommittees, I extend a warm welcome to Ambassador Robert Komer, the former Under Secretary of Defense for Policy; Mr.

Francis J. West, a former Assistant Secretary of Defense for International Security Affairs; Dr. Edward N. Luttwak, who is a Senior Fellow in Strategic Studies at the Center for Strategic and International Studies.

We appreciate your willingness to appear during this hearing and look forward to your testimony.

Once we have heard this panel, we will then hear from Secretary of the Navy John Lehman and Vice Adm. Henry Mustin, Deputy Chief of Naval Operations for Plans, Policy and Operations.

I recognize that we have the ranking minority member of the full committee here, Senator Warner. And I ask if he would like to make a statement.

Senator WARNER. Thank you, Mr. Chairman.

I thank my distinguished colleague from Maine, Senator Cohen, for allowing me to join here in the subcommittee hearings today.

Since World War II the U.S. aircraft carriers have been traditionally justified by their uses that were established not only in World War II, but again in Korea and Vietnam, namely offshore air support for combat on land. Carriers are mobile air bases which can be moved quickly to locations around the world, unlike any other element of substantial size in our military arsenal.

Carrier air power is essential for protection of ships at sea and the soldiers, sailors, and airmen ashore. And these requirements that were established so vividly in our history in World War II remain to date.

But there are other added requirements of carriers in today's modern world. Let us begin with NATO. Carriers make an essential contribution to the alliance's conventional war-fighting capability. And as we watch today the efforts of our President and others to work for less dependence on nuclear weapons, then the focus of attention should immediately go to aircraft carriers, because they are the principle means to augment and leverage the conventional forces.

None of our NATO partners, our allies, have air power at sea comparable to that of the United States with its carrier force. For example, the airplanes aboard a single carrier are in many instances equivalent to the total air power of some nations.

Another example. When the USS *America* visited the Norwegian Sea recently, that one carrier alone doubled the number of fighter and attack aircraft in the northern sector of Norway. Similarly, that same carrier battle group enhanced allied antisubmarine capabilities in the region by a factor of 5 to 10.

The United States has allies and national interests well beyond the boundaries of NATO. Around the world, our friends and their interests are increasingly threatened by a variety of means. In a world fraught with extremism, terrorism, and small wars which could threaten to become larger wars, our aircraft carriers have become the essential instrument of modern diplomacy for deterring aggression. Protecting our friends and preserving the peace, that is their mission.

In contrast with their traditional roles as we all remember in World War II, Korea, and Vietnam, today the timely arrival of a U.S. carrier battle group can often deter conflict while diplomatic efforts are under way. No one can say where conflict may start on the globe today, but U.S. interests are at least as likely to be threatened outside NATO as within it.

In those unpredictable circumstances, our carriers are unique in their ability to protect U.S. power unconstrained by national boundaries when and where they are required.

Now, let us turn to the tough schedules that our carriers maintain. The onerous schedules under which our carriers work today is clear evidence that we are shorthanded even with the number operationally today.

We have operated with a reduced force level for too long, and the costs in people and equipment have been high. In 1980, for example, the nuclear powered aircraft carrier the USS *Eisenhower* was at sea in the Indian Ocean, primarily protecting the economic lifelines of many nations, for 247 of 252 days.

At that pace, we wear out not only the machine itself, we burn out our sailors and we almost destroy family life. Both ship readiness and personnel retention suffer.

It will be 1990 before we achieve our minimum requirement of 15 deployable carrier battle groups. But unless we begin now to build timely replacement carriers—and I emphasize, replacement carriers—we will not be able to sustain that force level for more than a few more years.

That is because, beginning in the late 1990's, several of our aging carriers will necessarily be retired. Failure to replace these 45 to 50 year old ships will result in declining war-fighting capabilities and escalating maintenance requirements, and be a severe blow to our diplomacy.

May I remind my distinguished colleagues that what is at issue today is two replacement carriers, carriers required to meet the objectives of our Nation's national military strategy. Funding these ships now will ensure that our carrier force requirements for the most modern and capable ships this nation can build will be ready in the next century.

Moreover, providing funds now will allow us to acquire these ships at the least cost to the American taxpayer. Those who would oppose construction must prove that we should permit our carrier force level to decline and justify the increased risk to our national security. That is a heavy burden.

As for myself, I see no reason to believe that in the next century the world will be any less dangerous, nor our aircraft carriers any less useful than they are today.

Thank you, Mr. Chairman. And I thank my colleagues for their indulgence.

Senator KENNEDY. Senator Levin.

Senator LEVIN. Thank you, Senator Kennedy.

This afternoon we are holding the first joint hearing of our two subcommittees on the Navy's plans to accelerate procurement of two aircraft carriers. The Department's plans to buy two new aircraft carriers get to the heart of what kind of a planning process they have in the Defense Department.

There were no plans to buy any aircraft carriers before 1992 in last year's 5-year defense plan. No funds needed until 1992, we were told. This year, two carriers at $3.5 billion each magically show up in the fiscal year 1988 budget request.

It is remarkable that the Defense Department's planning process is so unstable that such massive shifts in plans and priorities can occur with no explanation for it coming from the Defense Department at the time it was forwarded to us. Indeed, it was accompanied by a denial by Secretary Weinberger on two occasions that there was no change in plans.

He told this committee that he does not concede a change or anything of the kind, to use his words, in this 1988 budget over what we were told just a few months before would be needed for aircraft carriers in the next 5-year period.

There was no announced change in national strategy over this period of time; apparently strategy had nothing to do with the decision to accelerate these two aircraft carriers.

Now, a second issue which we need to explore today concerns the issue of balance in the overall defense request. Last month, the commander in chief of the United States Pacific Command informed the committee that he has only days of supplies of many of the most important, critical munitions.

He listed combat sustainability as one of his greatest concerns. But the Department plans to buy two new aircraft carriers that will not enter service for 10 years, and in the meantime we will limp along on days of supply for our most important munitions.

I think that puts conventional defense exactly in the wrong priority. Now, along the same lines, the Navy's budget requests funds, of course, for these two new aircraft carriers, but has massive stretchouts and cuts of combat aircraft.

And this is ironic, to put it mildly. The aircraft carriers do not go to war; the aircraft do. Yet the Navy is willing to cut back its aircraft procurement plans by 45 percent while accelerating funds for two new carriers.

Our two subcommittees will be holding a follow-up hearing on March 26th, examining in greater detail the relationship of Navy aviation and these carriers.

I want to thank you, Mr. Chairman, for your initiative in this area. It is a very important question that we are looking at, and I look forward to hearing from our witnesses today.

Senator **Kennedy**. Thank you, Senator Levin.

I go to Senator Cohen.

Senator **Cohen**. I have no questions.

Senator **Kennedy**. Unless there is any strong concern by members of the committee who wanted to make a brief comment, we will go right to the witnesses. We agreed that we would have Mr. Komer, Mr. West, and Mr. Luttwak in that order. I think it is best if we hear from all of them and then we will go to the questions.

Ambassador Komer, we want to welcome you to the committee and look forward to your testimony.

STATEMENT OF AMBASSADOR ROBERT W. KOMER, FORMER UNDER SECRETARY OF DEFENSE FOR POLICY

Ambassador **Komer**. Thank you, Mr. Chairman. I appreciate being invited.

And as I made clear, however, in a book I wrote some years ago, "Attacking the Maritime Strategy," my objections to more aircraft carriers are primarily strategic. I am concerned, as Senator Levin was, with an unbalanced conventional posture. I do not think it would help the committee much if I offered opinions on technology, on ship design, on vulnerability or cost savings, because I am not qualified in those subjects.

However, I had 36 years experience—as a bureaucrat—in the national security field. "Bureaucrat" is a bad term, as you know if you have been following Dr. Luttwak, who thinks that they are behind all of these problems we have.

In fact, I was once the titular chief strategic policy adviser in the Pentagon. I had something to do with our NATO policies and programs, our Persian Gulf strategy, and I even wrote a planning guide for strategic planning, which was sent by the Secretary to the services and Chiefs of Staff. So I do feel fully capable of speaking on strategy, which I would define pragmatically as the interface between policy and resources, a very theoretical interface because it does not exist today.

My chief objections to the maritime strategy and to a 15 CVBG posture are strategic and cost. They cost enormously, and I do not think that they buy us enough to justify it. They also take money away from other more strategically essential programs.

If you look at the comparison between the percentage of the budget the Army gets today and the proportion the Navy gets, you find that the Navy is getting 33.4 percent and the Army is getting 26-plus. Now, John Lehman used to say to me: Well, that is not important, that is not a big difference. But when you have $300 billion defense budgets, 1 percent is $3 billion.

When you have a 7 percent difference, that is $21 billion. That will buy a lot of missiles or something or other.

To my regret, neither the White House nor the Pentagon nor the Congress has ever looked adequately at strategic alternatives for the allocation of resources. It just does not happen. The annual Pentagon DRB exercise—I was a member once—is a pain in the neck, and it certainly is no way to allocate $287 billion or $300 billion.

The time constraints are such that you argue more over 5 inch Deadeye guided shells more than you argue over two more aircraft carriers. There are too many people in the room and the budget is too big, it is too unmanageable to be handled in the DRB, even if they gave arbitrarily a half hour an issue.

Let me say that—and I think it is important—I am not anti-Navy. I am not even anti-carrier. We have the world's best Navy, and the only people, as Senator Warner can remind us, the only people who would question whether we have the world's best Navy have been our admirals.

There may be a few junior officers as well, but I remember Admiral Hayward raising the question that we now have the world's second best Navy, and you can guess whose was first.

At any rate, we want to keep it that way. But maritime strategy which rationalizes and justifies the 600 ship carrier-heavy Navy has many flaws. I find it hard to find out what the maritime strategy is, because Carl Trost talks about it in different terms than John Lehman, and Bing West here talks about it in different terms than anybody.

But with all that trouble, I want to applaud the Navy for an active attempt to design and articulate a new strategy, even if only for one service. The Marines do not get much out of it.

But I wish the JCS and the other services too would try an exercise like the Navy and come up with a new strategy. Of course, we would find out that one was going north, the other was going south, a third was going to sea, and the fourth was up in the air, which has always been our problem.

So I am all for the efforts to come up with a maritime strategy. I am very impressed that the top people, the CNO and the Secretary himself, speak on the subject, but I take a dim view of their unbalanced approach.

To make my case, let me say a little bit about U.S. strategy. We are not as bad off as some of us think, because on the nuclear side we have been doing quite well indeed ever since World War II, and the nuclear deterrent tends to cover up a large number of the weaknesses of our conventional posture.

The Russians may decide not to attack our allies around their periphery, but you know that it is not a decision which is based on our conventional deterrent capability. It is because a Soviet attack on Pakistan or someplace might tend to lead, through miscalculation, to a threatened nuclear response. That is what stops them. I mean, insofar as military means stop them at all.

We have a good grand strategy from the days of President Truman, so good that we are still pursuing it. The overall purpose is containment. The means we use is deterrence, primarily from nuclear weapons.

We have a sound policy appreciation of coalition strategies. I think that our coalition approach is the single most important advantage of the United States over the Soviet Union.

We have a whole series of rich allies, some of them more rich than is comfortable like Japan. They do not get a lot of military aid from us, even though they may used to have done so. But we have lots of rich allies all over the world—some of them tacit allies like Sweden.

Yet the Soviets have a miserably small collection of coalition partners—Fidel, the Ethiopians, Vietnam. I noticed somebody added in the Somalis the other day, but it does not add up to very much.

And that I think is the chief advantage in power terms that we have over our Soviet friends. We no longer have nuclear superiority. We have just got lots of allies who are very wealthy in lots of good places in the world. We could not even pursue a force projection strategy if we did not have all these allies, unless we wanted to go over and occupy their territory, and that would not be such a great idea.

I see three main flaws in the maritime strategy: It is unbalanced; it does not tie into national strategy or to any kind of a balanced military strategy that I can figure out; and it is aimed at lesser needs. I will describe that.

The basic geopolitical situation that we confront is that the United States is a great seapower. We tend, with our allies, to control the seas. And you look at our chief opponent and he is a great land power, residing in the center of the continent of Eurasia, much of the periphery of which is controlled by us.

It is very difficult for a sea power to attack a land power on any strategic scale. It is very difficult for a land power to attack a sea power, in fact even more so. I do not think land power is worth very much at sea, though air power has its merits.

Let me look at our three major—I will not say commitments, but at our three major overseas areas of concern: Europe, Persian Gulf, Northeast Asia. Now, aside from protecting the sea lanes so that we can get reinforcements there, what do carriers provide?

PERSIAN GULF

Starting out with the Persian Gulf, I remember when we were talking about the Iran rescue mission in 1979–1980, that the Navy said they did not want to put a carrier in the Persian Gulf. The water was too shallow, the area was constrained, the Russians could come down with Backfires from the Caucasus.

We had such problems, which kept the carriers out 200 miles from the gulf, out beyond Hormuz. This created one problem. Given the range of naval aircraft, we could not even get up to Abadan with more than a minute of loiter time. What that meant was that various options which we wanted to use naval-based air power to meet were very difficult to meet, because if they did not have loiter time they might not find the Abadan refinery.

So it is hard to see how you defend Persian Gulf oil with carrier-based air power. Now, it is true that you can defend the sea lanes which take the oil from Iran, Iraq, Kuwait, Saudi Arabia. You need the Navy to protect the sea lanes, but first you need the oil. If you don't have the oil, the sea lanes are not very important.

And I found very limited utility for naval power in the Persian Gulf. The only real utility was, of course, the U.S. Marines, who did not have these inhibitions about going so close to the Backfires, and who were prepared to land and seize bases, which it seems to me was a very good thing to do.

NORTHEAST ASIA

Let me switch now to Northeast Asia. If Japan or Korea were attacked, we of course could do what we did in Korea or Vietnam, which was line up the carriers offshore and use them as floating air bases to attack land targets. But I do not think that is going to do very much good against the kind of threat which the Soviets might pose to Japan.

It would probably be missiles, including what is left of the SS-20's, and it is very hard to find mobile missiles in the kind of terrain that they have over there in northeast Siberia.

What the Japanese need is ships to protect their convoys, is infantry and air power to hold onto Hokkaido. And what they cannot provide, they will ask us to provide for them.

EUROPE

Well, Europe is a more iffy proposition. I will agree with the Navy on the importance of the Scandinavian peninsula, especially northern Norway. I agree that naval air power can make a big difference.

We came up in 1980 with a different solution. We prepositioned marine air power. It is there right now in north Norway, and that would be—one could look at that as an alternative.

In the Mediterranean, I do not mean to denigrate the importance of the fleet, but the Soviet forces in the Mediterranean have, I believe, gone down substantially. I remember an admiral telling me that it would take maybe a week to dispose of the Soviet Mediterranean squadron. And I am not confident that naval air missions from carriers against the Crimea or Nikoliaev would make a lot of difference.

We have to remember that the carrier has one major offensive aircraft system, the A-6. And it does not carry an awful lot, and the A-6 does not go a great distance. And you have got, what, 16 or 18 per carrier. The A-18's, the A-17's, do not have the range to hit land targets and to exit via alternative routes.

Now, aside from protecting the sea lanes, I do not see the great advantage of carriers in the European scenario. The Navy once looked at bringing the carriers in close, did a big study, and concluded the carriers would be more vulnerable than the Soviets would be vulnerable to the carrier aircraft.

I thought they were right, but I admired their making the study. Why the hell didn't the Air Force make that study?

So I guess what I am saying is that naval air power does not buy us what it says or, to put it more precisely, what some of the admirals and the Secretary of the Navy say. Senator Warner, you mentioned presence missions. Carriers are great for presence missions. So are battleships.

But you know, when we are talking about presence missions versus a Lebanon—well, not a Lebanon but a Vietnam or a Korea, I just do not think they add up. So I will stipulate that carriers are great for presence missions.

It is the same with limited wars. I do not think anybody has claimed—I am surprised John Lehman has not—that naval air really won the Korean war and would have won in Vietnam. I was there, I do not think they did. But I think that ground-based air made a greater contribution in Korea and Vietnam. That may be debatable. I am prepared to debate it.

In much of the writing about the maritime strategy, we come up with the fascinating subject of terminating wars. Now, I am not at all clear what the Navy's role would be in terminating wars. The best I can come up with—Bing West may have more to say on that; he has written about it recently—if we knock out the Soviet missile submarines in the Barents Sea and in the Sea of Okutsk, or if we threaten to, this may hold an important Soviet capability hostage.

Well, they have only 20 percent of their big missiles on the submarines. They've got a lot of extra ones. We do not know why they have so many. And I do not think that that would contribute a great deal to terminating a war with the Soviet Union, of course.

Moreover, when it comes to going into the enemy's areas where he holds back his submarines, I would prefer our submarines to our carriers. The submarine has a much better record there.

Senator **Kennedy**. Ambassador, I do not want to interrupt your flow here, but we have requested that everyone make a 10 minute presentation. We want to make sure these others get their presentations in. I know we have a good attendance here and we will have a good many questions as well.

Ambassador **Komer**. I will stop in 2 minutes. Is that all right?

The second big point I wanted to make was with respect to resource allocation. The maritime posture costs too much for what we get. I think this is the chief flaw at a time when we have huge trade and budget deficits.

When we have cuts in the defense budget and more to come, can we afford to spend so much on 15 carrier battle groups? Secretary Lehman once told us that a carrier battle group all-up cost about $16.8 billion. That was back in 1983, I believe. This ought to be up $4 billion or $5 billion now.

Remember, it is not just the cost of the carriers. It is the cost of the air wings, the Aegis ships, the destroyers, the frigates, the URGs and the basing. Now, the present budget proposal is not to increase all of these things. It is just to provide two more carriers to replace two older carriers. But most of the money is in what goes along with it later.

In terms of resource allocation, the Navy has had and is having the only real force structure increase in DOD. It is going up from 459 to 600 ships. If that is not a huge force structure increase, I do not know what is.

The Army in return is getting no more personnel. The Air Force has no additional wings. In fact, the Air Force announced the other day they are cutting TAC down from 40 to 37 wings. The Navy gets more people. If you keep the cost ceilings on or the personnel ceilings on, it will have to come out of the Army, the Air Force, and the Marines.

To sum up, the biggest problem that DOD and the Congress and the White House confront today is the gap between strategy and resources. That is where SDI hurts a great deal.

We have never faced up to this problem. The JCS told us that the gap, in just about those words, was their key problem, though they never gave us even a quasi-answer. We could solve a lot of problems and produce a better balanced overall defense posture if we attacked this question. How we allocate the marginal defense dollar is the gut defense issue.

Having defined the gut issue, let me just quickly give my solutions. I would buy Army and Air Force ammunition and spares. I would really buy some for the Navy, too.

I would certainly beef up military aid to allies, which I notice that most of the military witnesses you had before this committee have stressed. It is a lot cheaper to provide equipment, even to the Germans, because they provide the men and half the equipment, they have got the bases and everything else. It is the cheapest thing we could do.

I would cut the defense budget to ease the budget deficit. I would buy more submarines and patrol planes, and I would certainly do something about the $100 million that the Congress took out of the electronic warfare budget. I believe that was the Congress.

There are any number of other things. Those are the ones that came most readily to mind.

Thank you very much.

Senator **Kennedy**. Very good, Mr. Ambassador.

Mr. West.

STATEMENT OF FRANCIS J. WEST, JR., FORMER ASSISTANT SECRETARY OF DEFENSE FOR INTERNATIONAL SECURITY AFFAIRS

Mr. **West**. Mr. Chairman, in view of the time I will submit my written statement for the record, and summarize it on a few charts that I have here.

Senator **Kennedy**. Fine.

Mr. **West**. I would like Mr. Chairman, to address the issue related to our conventional forces——

Mr. **Kennedy**. Mr. West, I understand you are ably assisted. Do you want to introduce him?

Mr. **West**. This is my son, Owen West, who will be joining the Naval ROTC unit up at Harvard next fall.

Mr. **Kennedy**. Fine. We will be very glad to get him.

Mr. **West**. What I would like to do is take two different frames of reference for discussing carriers. Basically, we size our forces, conventional forces, for conflict with the Soviet Union, but I think there are two ways of splitting it.

There is the large war, which is the NATO war, and then there are the projection forces. So I would like to address first the NATO war and then the projection forces.

Concerning the NATO war, the biggest problem we have had for the last 15 years is that, no matter how we cut it, we have a 50 or 60 or 40 percent confidence in our capabilities. And the first question is, why is that? I think there are three interrelated reasons why.

The first is that the rich nations of Europe, with a gross national product per capita as high as ours, do not put as much into the common defense.

The second reason is that the threat of nuclear war and the enormous deterrent value thereof is also a crutch not to put money into conventional forces, under the allegation that it is not really needed.

And the third reason is that, although I think we have a very sound political strategy for NATO and it should continue, that strategy, is unsound militarily. The essence of that strategy says that we must defend forward along the borders of NATO, that we cannot lose any territory, and therefore our land forces cannot maneuver behind that line nor, for reasons of stability with the East, can they have plans and exercises for maneuvering forward of that line.

So in essence, we tie behind our back one arm, which is maneuver, and we say we are going to mass against the Soviet firepower our firepower, and that is playing to a Soviet strength. And I think as long as that essential strategic condition pertains, any marginal American resources put into NATO—and that would include taking money from carriers and putting it there—will not rectify what is in essence a fundamental strategic problem.

If one were to try to talk about how to rectify the strategic problem, I think that there is an alternative. Mr. Komer has asked, are there other ways of looking at the strategy, and I think that basically there is. We could ask the Chairman of the Joint Chiefs and the Joint Chiefs if they would come before this body and give us a coherent conventional war-fighting strategy to underlie some of our plans.

Our current plan is simple. It is an initial forward defense along that line, and where most observers say it is about 50-50, coin toss at best, and if it fails a request for the early use of nuclear weapons, the very early use of nuclear weapons.

And the question is, does that have to be the only strategy we have? I have seen enough war-gaming and enough exercises by the services to recognize that there is an alternative. Up at the Naval War College in Newport, Rhode Island, for instance, for the last eight years they have the global war exercise, where they bring together between 400 and 600 officers from all the services every summer for 3 weeks to look at how we might fight a conventional war.

And out of 8 years of that, I think certain lessons have fallen out. And the answer is, yes, it is possible to have a conventional war and not have to initiate nuclear war, but you pay certain costs.

The fact is that democracies are not willing in peacetime to sacrifice against a threat which is not near and present, and as a result if we go to war under those conditions we are going to lose territory in many theaters in the initial battles. And that is what we have tried to avoid even acknowledging to ourselves.

The other fact is that the war would be global. There is no way that the United States and the Soviet Union would go into a war that had vital stakes and believe that that would be isolated to just one theater.

Under those conditions, the role of the carriers has become clear time and time again, and that is that basically one must have a way of having mobile air umbrellas that can also strike at the Soviet bases, that would attack, that can move in different theaters and protect all the forces that we are going to have to deploy.

The major theaters that keep coming up time and again are the Atlantic, the Norwegian Sea as long as we keep our pledge to Norway, the Mediterranean and the western Pacific. Notice I did not mention the Persian Gulf and the Indian Ocean. One would hope that that region and the Caribbean could be treated as lesser theaters and not have to occupy us.

If one believes that one needs three or four carrier battle groups in order to have sufficient force to go against the Soviets and to move across these oceans, then simple arithmetic indicates that 15 deployable carrier battle groups is by no means an excessive number. It is less than what you would need, so you cannot have simultaneous operations.

You are going to have to have sequential operations, which means in some theaters we are simply not going to be there when a war begins, not in large numbers.

If I were to summarize what I have said, it is this. This is our current strategy. No matter how we cut it, it is that we do not want to lose any territory, so we will defend along a thin edge for as long as we can. And basically General Rogers says that may be for one week or two weeks, but it is in that near time frame, at which point he must ask for the release of nuclear weapons, because we drop off the side of the cliff, the lines are broken.

So the option is either you fall back into NATO territory or you take the nuclear pistol, you point it at your head, you point it at the head of the Soviet Union, you close your eyes—and I do not know what happens next. That is about as far as that scenario takes you.

Now, if we take the two carriers that we are talking about and we just add to that strategy, we do not change the strategy, we simply take these resources, put them into Western Europe, how much more do we gain under that strategy?

Let us say that we gain enormously. Let us say we gain 20 percent more than what we now have. We extend the line out somewhat, but we still hit that cliff and we are still left with saying the conventional forces lead to the nuclear war.

What I am suggesting is an alternative and an added strategy. I believe we should keep this as the bedrock NATO strategy, but I see no reason why the Americans and why the Chairman of the Joint Chiefs would not have in his hip pocket another strategy that he had worked out with his commanders in chief.

And basically, I call that the extended defense strategy. Fully recognizing that he could not hold all this territory, he would have some plan for where he had to give up, just as we did in the beginning of World War II, in certain theaters and set certain priorities; and gradually, some time later build back.

That is a radical difference from this strategy. There is a cost here. Nothing is without cost in this. But if we had this, we have something added to what we have today.

I would like to shift and talk about the other issue, about projection forces. The other issue is not the NATO global war. It is the case we see all the time. It is the issue about whether one believes in the future one can imagine a United States-Soviet clash as distinct from a huge war, but a serious clash that would take place outside of NATO.

And in this particular case, I think that our projection forces have one particular goal, or at least it would be interesting as a policy statement if they did have that goal, and that would be to contain Soviet global power. And how do I mean contain? I mean, I like the world just about the way it is today.

The Soviets can go to Syria, they can go to Libya, they can go to Cuba, they can go to Ethiopia. They can go any place they want, and they can go there with their air defense and their radars and their generals and all their billions of dollars. And they can stay there 5 years, 10 years, 15 years, 20 years.

And the President can see an action that is absolutely egregious by a leader like Qaddafi and he can turn around and say: I want that taken out. And in 20 minutes our projection forces take out 20 years of what the Soviets have been trying to build up. I like that definition of superiority, and I would like to see us with our projection forces having that edge.

I call it a business line. The United States in one business line is in the business of having good projection forces. We have done very well in that business line. I think it is worth staying in.

In summary I would say this. In terms of the global war and the conventional forces, we have a distinct unease in NATO about our conventional capabilities. But why? It is not because of two carriers more or less.

It is fundamentally, first and foremost, because the Western Europeans do not sacrifice as much as we do for the common defense. This is a lamentable fact, to say nothing of Japan, but it is a fact. Although I am not suggesting that we tear away from them in any way, shape, form or manner, we have to recognize that helping out by two more carriers more or less is not the heart of the matter.

The second issue is that what is a very sound political strategy is an unsound military strategy. Coming before you gentlemen in the next few months will be a whole series of proposals to reduce our nuclear forces in Europe.

And therefore, some will argue, we must immediately and automatically compensate by putting more American forces into Europe. Why? Why do that if the people who are making that proposal do not also come to you with a conventional strategy that makes sense? But if their conventional strategy is simply to say two more days and then we use nuclear weapons, I would not call that a sensible conventional strategy.

What I am suggesting is something along these lines, Mr. Chairman. If I go back to where I started, which is our NATO capabilities, and I said we had about a 50 percent confidence factor. And you say, how do you increase that?

One proposal is along the lines that Mr. Komer said. We do not put it into carriers. You take the dollars from carriers and you add it here in NATO. But that is going to gain you very little on the margin.

Where I think we can really gain on the margin is if we added another kind of strategy. Notice I did not say substituted. We keep the current NATO strategy, then we ask the Chairman to quietly develop alternatives so that our confidence goes up, so that the President would have more than one option in a moment of truth.

About the projection forces, I think we have to recognize that in most areas of the world it is not a coalition defense relative to the Soviet Union. It certainly is in the central theaters of Western Europe, but in many other places the West Europeans are going to be disengaged in the competition between us and the Soviet Union.

The chances of a conflict between the United States and the Soviet Union are low anywhere, but they are higher outside of Western Europe than inside Western Europe. I would like to see us as a policy matter keep our projection superiority, so that at any particular time the Chairman can say with confidence: At any place I go, I have that level of superiority. And along those lines carriers have proven their worth.

Basically, the issue here is not a technological issue. We are not going to chance the type of carrier platforms over the next several years.

So if, as the Navy indicates, it makes cost effective sense in terms of saving money to start procuring the carriers, the platforms, and if at the same time one believes that tactical air may change, then it may make sense to go on now with the procurement of the hulls, but not rush into how many aircraft are procured. A revolution is coming in aircraft. The aircraft we really will want by 1995 or the year 2000 may look quite different from the aircraft we have today.

So it would strike me as being rather sensible to get on with a hull that is not going to change, but not be in any rush about the aircraft themselves.

So I summarize it this way, Mr. Chairman. The issue before you is two CV's, and in your opening statement you said, how does one decide the issue? Analysts look at it in terms of equal cost, which is what you said. You said, if you could buy this or that, what should I buy?

The first alternative, is to take the money that would have gone into carriers and put it into our land forces in Europe. I would hate to see us do that unless we re-examined what kind of a strategy we want over there.

The second way of looking at it is to say: No, we could have a clash outside of Western Europe, and we need to be prepared outside of Western Europe, but it should not be carriers; I am more inclined toward land forces and fixed land bases.

The only comment I have on that is that carriers do bring you mobility and flexibility. Someone just handed this newspaper to me when I walked in, and it says: "Spain demands removal of all U.S. F-16's from its soil." Well, I think that there is practicality, given the uncertainty of a geopolitical world, in keeping some of our assets mobile and at sea.

Last, there is the issue that the Chairman of the Joint Chiefs of Staff raised, which is, has the Navy itself balanced its budget so that this makes sense? I cannot address that issue. I think only a naval officer can address that issue. Admiral Mustin will be appearing before you in a few minutes.

So in general, from a strategic point of view I can see merit in going ahead with carriers. If the issue is, yes, to go ahead with carriers, then, having solved that issue, the second issue is clear: when does it make most cost effective sense, now or in the future?

[The prepared statement of Mr. West follows:]

STATEMENT OF THE HONORABLE F.J. WEST, JR., BEFORE THE SENATE ARMED SERVICES SUBCOMMITTEES, 12 MARCH 1987.

MR. CHAIRMEN, IT IS AN HONOR TO APPEAR BEFORE YOUR SUBCOMMITTEES ON THE SUBJECTS OF STRATEGY, SUFFICIENCY AND CARRIER PROCUREMENT.LET US BEGIN BY ASSESSING THE CURRENT SITUATION: IF WE COULD KEEP THE EXISTING GLOBAL CORRELATION OF FORCES FOR THE NEXT 30 YEARS, WOULD WE BE SATISFIED? I SUSPECT THE ANSWER IS MORE YES THAN NO. THIS SAYS WE ARE A STATUS QUO POWER AND THAT THE STEWARDS OF OUR NATIONAL SECURITY HAVE DONE A GOOD JOB OVER THE PAST 40 YEARS. SO THE STRATEGIC ISSUE IS NOT HOW TO CORRECT SOME FATAL FLAW; IT IS HOW TO IMPROVE OUR SECURITY POSITION. WHICH ELEMENTS SHOULD BE PRESERVED AND IMPROVED?

I

FOREMOST, WE SHOULD PRESERVE THE BEDROCK PRINCIPLE: CONTAINMENT OF SOVIET MILITARY POWER. WE HAVE DONE THIS FOR 40 YEARS AND THERE IS NO POLITICAL OR MILITARY REASON WHY WE SHOULD NOT PERSIST. TO DO SO REQUIRES THREE KINDS OF MILITARY POWER: SECURE, SECOND-STRIKE NUCLEAR FORCES WHICH AT LEAST MAINTAIN DETERRENCE FOR OURSELVES AND OUR ALLIES; STRONG CONVENTIONAL FORCES IN EUROPE; AND, OUTSIDE EUROPE, FLEXIBLE FORCES SUPERIOR TO THOSE OF THE SOVIET UNION.

THE AMERICAN BODY POLITIC SUPPORTS RESOURCES FOR DEFENSE ON A CYCLICAL, IF NOT ROLLERCOASTER, BASIS. WHEN RESOURCES BECOME TOO THIN, THIS IS COMMUNICATED BY GREAT UNEASE THROUGHOUT THE NATIONAL SECURITY COMMUNITY AND A RESOURCE CORRECTION FOLLOWS. MANY OF YOU, FOR INSTANCE, CAN RECALL DEFENSE SECRETARY SCHLESINGER'S DECLARATION IN 1975 THAT CUTS IN DEFENSE WERE "DEEP, SAVAGE AND ARBITRARY". ALTHOUGH IT MAY HAVE COST HIM HIS JOB, THAT UTTERENCE WAS HEEDED. BY THE BEGINNING OF THIS DECADE, THE SERVICES WERE RECEIVING A GENEROUS LEVEL OF RESOURCES. NOW WE ARE ENTERING A PERIOD WHEN RESOURCES WILL BE LESS. IF WE GO TOO FAR, THERE WILL BE ANOTHER CORRECTION. UNFORTUNATELY, OUR ALLIES IN WESTERN EUROPE AND JAPAN EXHIBIT NO SUCH CYCLICAL CORRECTIONS AND THE U.S. HAS NO INTENTION OF MATCHING THE BRUTE FORCE SPENDING APPROACH OF THE SOVIET UNION. IT IS IN THE NATURE OF DEMOCRACIES NOT TO SACRIFICE FOR THE COMMON DEFENSE UNTIL FACED WITH A CLEAR AND PRESENT DANGER.

II

THE CONSEQUENCE IS THAT MOST INFORMED OBSERVERS DO NOT BELIEVE THE WEST COULD CARRY OUT ITS DECLARED STRATEGY OF AN INITIAL FORWARD DEFENSE BY CONVENTIONAL FORCES.TO BE SURE, THE THREAT OF INITIATING NUCLEAR WAR IS A POWERFUL DETERRENT, BUT IT RESTS ON THE PREMISE THAT AMERICANS ARE WILLING TO COMMIT SUICIDE

FOR EUROPEANS WHO SPEND COMPARATIVELY LESS OF THEIR WEALTH FOR THE COMMON DEFENSE.

THE EUROPEANS FOUGHT THEIR LAST GREAT CIVIL WAR ALMOST A HALF CENTURY AGO. ONE CONSEQUENCE OF WORLD WAR II WAS THAT ALL THE NATIONS OF EUROPE GAVE UP THE AMBITIONS, DANGERS AND BURDENS OF BEING GLOBAL POWERS. THE LONGTERM TREND IN WESTERN EUROPE IS DISENGAGEMENT FORM THE GLOBAL COMPETITION OF THE TWO SUPERPOWERS. IT IS THEREFORE DOUBTFUL THAT THESE SAME WEST EUROPEAN NATIONS WILL BE MOTIVATED TO MAKE THE FINANCIAL SACRIFICES NECESSARY TO HAVE HIGH CONFIDENCE IN THEIR CONVENTIONAL FORCES. AS WE REDUCE OUR NUCLEAR FORCES IN EUROPE, AS POLITICAL COMPENSATION WE WILL BE URGED TO INCREASE OUR BUDGET FOR NATO'S CONVENTIONAL FORCES. THE EUROPEANS MAY PROMISE TO DO A LITTLE MORE TOO, BUT IT WOULD BE STRATEGICALLY IMPRUDENT FOR THE U.S. INCREASE SPENDING FOR NATO AT THE EXPENSE OF OUR OTHER FORCES. RESOURCES ALONE ARE NOT THE SOLUTION TO THE THE SOVIET EDGE IN MASS AND FIREPOWER ALONG THE INNER-GERMAN BORDER.

WE WOULD HAVE TO SPEND TWO OR THREE TIMES MORE THAN THE SOVIETS TO HAVE CONFIDENCE IN OUR POLITICALLY-DRIVEN MILITARY STRATEGY OF FORWARD DEFENSE ALONG A MAGINOT LINE WITHOUT PHYSICAL BARRIERS. FOR ALLIANCE COHESION, THE POLITICAL STRATEGY IS SOUND AND SHOULD ENDURE. THE REQUIREMENT, HOWEVER, TO DEFEND THE EDGE OF WEST GERMAN TERRITORY DEPRIVES OUR LAND FORCES OF STRATEGY AND OF MANEUVER AND LEAVES THEM WITH ONLY FIREPOWER TO STOP SOVIET FIREPOWER AND MASS. THE U.S. DOES NOT HAVE A REALISTIC STRATEGY FOR FIGHTING THE SOVIET UNION IN A MAJOR CONVENTIONAL WAR.

THE NAVY HAS A MARITIME STRATEGY FOR FIGHTING ITS PIECE OF THE WAR. BUT THE UNIFIED COMMANDERS AND THE SERVICES AS A JOINT BODY DO NOT HAVE A STRATEGY. WHY? THE MAJOR REASON IS THAT A REALISTIC STRATEGY WOULD HAVE TO ACKNOWLEDGE THE LIKELIHOOD OF SHARP INITIAL SETBACKS, LARGESCALE DESTRUCTION IN ALLIED COUNTRIES AND THE PROBABLE LOSS OF TERRITORY IN SEVERAL THEATERS. THESE PREMISES ARE UNACCEPTABLE TO OUR ALLIES AND PERHAPS TO SOME OF OUR UNIFIED COMMANDERS. THE JCS, FOR INSTANCE, MIGHT ASK FOR A REALISTIC STRATEGY FROM CINCEUR, BUT THAT SAME MAN IS ALSO SACEUR, AND HE MUST BE CAREFUL NOT TO PROPOSE MILITARY CONTINGENCY PLANS, NO MATTER HOW SENSIBLE, WHICH MAY WEAKEN THE POLITICAL ALLIANCE.

SO THERE REMAINS A PROBLEM WITH OUR MILITARY STRATEGY.

SENATORS, YOU OR YOUR STAFFS CAN GO TO THE NAVAL WAR COLLEGE AND PARTICIPATE IN THE ANNUAL GLOBAL WAR GAME WHICH TESTS HOW ALL OUR FORCES WOULD JOINTLY FIGHT AGAINST THE SOVIET UNION. IN THE 1930'S, WORLD WAR II WAS GAMED AT THE COLLEGE EVERY YEARY AND WHEN THE WAR DID COME, PLAN ORANGE HAD BEEN CIRCULATED THROUGHOUT THE MILITARY AND WE HAD AN INITIAL SENSE OF HOW WE WOULD HAVE TO FIGHT AND WHAT PRIORITIES HAD TO BE MADE. FOR EIGHT YEARS. SINCE 1978, WE HAVE BEEN GAMING HOW TO FIGHT A MAJOR WAR AGAINST THE SOVIET UION.

WE DO NOT HAVE A UNIFIED CONVENTIONAL WAR STRATEGY - AS DISTINCT FROM UNOFFICIAL WAR COLLEGE EFFORTS - BECAUSE TO BE REALISTIC IT WOULD HAVE TO TAKE INTO ACCOUNT INITIAL SETBACKS. TO DO SO IS POLITICALLY UNACCEPTABLE. YET NOT TO DO SO LEAVES US WITHOUT A REALISTIC CONVENTIONAL STRATEGY. THIS CONDITION WAS PERHAPS MARGINALLY ACCEPTABLE WHEN WE POSESSED NUCLEAR SUPERIORITY, MAKING CREDIBLE THE THREAT OF THE U.S. FIRST USE OF NUCLEAR WEAPONS. THE THREAT OF NUCLEAR WAR REMAINS AN EXTRAORDINARY DETERRENT. BUT I ALSO BELIEVE THE JCS SHOULD TAKE THE LESSONS FROM THE GLOBAL WAR SERIES AT NEWPORT, TAKE THE WORK FROM THE ARMY AND AIR WAR COLLEGES, FROM NDU, TAKE THE DOZENS OF MAJOR EXERCISES BY THE UNIFIED COMMANDERS, AND - QUIETLY BUT FIRMLY - CRAFT A STRATEGY FOR PROTRACTED CONVENTIONAL WAR.

III

SINCE BY DEFINITION A DEMOCRACY DURING PEACETIME WILL NOT DEDICATE THE RESOURCES NECESSARY FOR SUCH A CONFLICT, PARALLEL WITH THE CONVENTIONAL STRATEGY THERE MUST BE A MOBILIZAITON PLAN. DOD AND FEMA ARE INSTITUTIONALLY CAPABLE OF DEVELOPING AND GAMING SUCH A PLAN, JUST AS THE WAR COLLEGES GAME MILITARY PLANS.

IT MAY BE OBJECTED THAT OUR MOBILIZATION WILL REQUIRE 24 MONTHS. THAT UNACCEPTABLE TIME COULD BE CUT TO SIX MONTHS OVER THE NEXT DECADE,IF A TRUST FUND WERE LEGISLATED AT ONE PERCENT OF THE ANNUAL PROCUREMENT AND MUNITIONS ACCOUNTS AND THE FUNDS WERE INVESTED IN A MOBILIZATION EFFORT.

THE ALLIES - AND WE - WILL NOT INVEST HEAVILY ENOUGH TO HAVE A CREDIBLE INITIAL WAR STRATEGY. IT IS LIKE A LIGHT-HEAVYWEIGHT BOXER, WITH GOOD SPEED, ENDURANCE AND ADAPTABLILITY, DECIDING TO KNOCK OR BE KNOCKED OUT BY A SUPER HEAVYWEIGHT IN THE FIRST ROUND. IF WE DO DEVELOP A PROTRACTED WAR OPTION AS WE BARGAIN DOWN OUR NUCLEAR FORCES IN EUROPE, THEN WE MUST KEEP OUR NAVAL SUPERIORITY, IF WE ARE TO CONTINUE TO FIGHT. THE CARRIERS DO TWO THINGS: THEY PROVIDE THE MOBILE AIR UMBRELLAS WHICH DEFEND OUR MOVEMENT OF SUPPLIES ANYWHERE IN THE WORLLD, AND THEY DELIVER MUNITIONS ASHORE, FROM THE BEACH TO 500 MILES INLAND.

SINCE 1974, AND IN SEA PLAN 2000 IN 1977, THE NAVY HAS ARGUED FOR 600 SHIPS, ABOUT 15 CARRIERS AND AN OFFENSIVE BATTLE PLAN. WHY 15 CVS? IF FIGHTING THE SOVIETS, IN ANY THEATER WE WOULD HAVE TO MASS THREE TO FOUR BATTLE GROUPS. THERE ARE FIVE MAJOR THEATERS: ATLANTIC, NORWEGIAN SEA, MEDITERRANEAN, SOUTHWEST ASIA AND THE WESTERN PACIFIC, (WITH THE CARRIBEAN A MINOR SIXTH THEATER). GIVEN THAT TWO CARRIERS WOULD BE IN OVERHAUL OR WORKUP AT ANY GIVEN TIME AND GIVEN THAT LOSSES WOULD OCCUR,A SERIES OF EXERCISES AND WARGAMES YEAR AFTER YEAR HAVE SHOWN THAT TWELVE OR THIRTEEN DEPLOYED CVS ARE NEEDED, IF USED IN PRUDENT, SEQUENTIAL CAMPAIGNS, TO GRADUALLY ASSERT ALLIED CONTROL OVER THOSE MARITIME THEATERS.

IV

MY FINAL POINT PERTAINS TO THE WORLD OUTSIDE WESTERN EUROPE. HERE WE SEE HIGH INSTABILITIES - "ARCS OF CRISES" - AND THE INTERMINGLING OF SOVIET FORCES WITH THEIR ALLLIES AND OF U.S. FORCES WITH OUR ALLIES AND FRIENDS. THE CHANCES OF A DIRECT U.S. - SOVIET CONFLICT ARE LOW ANYWHERE, BUT THEY ARE HIGHER OUTSIDE WESTERN EUROPE. HOWEVER, U.S. FORCES ARE IN THE DOMINANT POSITION. WE HAVE AN EDGE ANYWHERE IN THE WORLD WHERE THE SOVIETS MUST RELY UPON SEA OR AIR LINES OF COMMUNICATION.

THIS FORCE MISMATCH IS REASSURING TO AMERICAN INTERESTS. WE TAKE IT FOR GRANTED BUT, IF ONE STOPS AND THINKS ABOUT IT, IT IS RATHER REMARKABLE. THE SOVIETS CAN BUILD FOR TEN, 15, 20 YEARS IN SYRIA, CUBA, LIBYA OR WHEREVER, AND IN A WEEK TO TWO WE CAN MASS THREE OR FOUR BATTLE GROUPS OR BOMBER GROUPS AND TAKE OUT ANY TARGET SET WE WANT. WE CAN LAND OUR TROOPS WHERE WE WANT. WE CAN GO ANYWHERE WE WANT ACROSS THE OCEANS. WE DEBATE SHARPLY WHETHER, IN A WAR, WE SHOULD STRIKE THE KOLA; THE QUESTION IS WHETHER IT WOULD BE WORTH THE COST. BUT IT IS WORTH NOTING THAT BOTH WE AND THE SOVIETS KNOW WE COULD DO IT IF WE WANTED TO. OUR INTERNAL DEBATES ARE ABOUT HOW LONG IT WILL TAKE US TO DESTROY SOVIET NAVAL AND PROJECTION POWER, HOW LONG SOVIET SSBNs CAN SURVIVE BEFORE WE SINK THEM, HOW LONG BEFORE WE SHUT DOWN THE SOVIET FAR EAST C3 AND BOMBER FORCES, HOW QUICKLY WE CAN DEPLOY TO NORTHERN NORWAY, ETC. IN ESSENCE, OUR DEBATES ARE NOT ABOUT WHETHER WE HAVE NAVAL SUPERIORITY, BUT ABOUT HOW WE SHOULD APPLY IT.

THIS IS PREFERABLE TO THE DEBATES OF THE 1970'S WHEN THE ISSUE DURING THE YOM KIPPUR WAR WAS WHETHER THE 6TH FLEET COULD HOLD STATION AGAINST THE SOVIET FLEET IN THE EASTERN MEDITERRANEAN AND, IN ASIA, CHINESE AND JAPANESE LEADERS WERE ASKING WHETHER THE U.S. COULD, IN WAR, MAINTAIN A LINK TO THEIR COUNTRIES.

V

WE SHOULD ALSO DEVELOP STRATEGIC PLANNING PRINCIPLES FOR A SERIOUS U.S.-SOVIET CONFLICT WHICH DID NOT INCLUDE FIGHTING IN WESTERN EUROPE. WE HAVE NO SUCH PLANNIING SCENARIO, BUT WE SHOULD, GIVEN THESE TRENDS: THE PERSISTENCE OF MILITARY VIOLENCE OUTSIDE WESTERN EUROPE, DEEMPHASIS OF NUCLEAR SYSTEMS AS A DETERRENT TO CONVENTIONAL AGGRESSION, THE WEST EUROPEAN TREND TOWARD DISENGAGEMENT, THE INCREASE IN LONG-RANGE, ACCURATE, LETHAL CONVENTIONAL SYSTEMS, A FOURTH STRATEGIC THEATER EMERGING TO OUR SOUTH, ABSENCE OF REAL GROWTH IN FUNDS FOR CONVENTIONAL FORCES. IT IS QUITE POSSIBLE THAT THE UNITED STATES WILL SHIFT GRADUALLY TOWARDS A DEFENSE POSTURE TAHT MOVES AWAY FROM LARGE, GEOGRAPHICALLY TIED FORWARD DEPLOYMENTS AND TOWARD THE

MAINTENANCE OF A CENTRAL RESERVE OF FORCES THAT COULD BE LIFTED AND COMMITTED ANYWHERE. CONFLICT WHICH ENGAGES U.S. AND SOVIET FORCES IS MORE LIKELY OUTSIDE EUROPE, IN REGIONS CHARACTERIZED BY FAR LESS MATURE OR STABLE SECURITY REGIMES.

WE TAKE FOR GRANTED A FUNCTIONAL MILITARY SUPERIORITY-AMERICAN SEA-BASED AIR - WHICH IN FACT SHAPES A GLOBAL GEOPOLITICAL BOUNDARY CONDITION: ANY SOVIET DEPLOYMENT ANYWHERE IN THE WORLD WHICH HAS TO CROSS AN OCEAN CAN BE TAKEN OUT IF THE U.S. WISHES TO DO SO. IT MAKES NO DIFFERENCE HOW LONG THEY WORK ON AIR DEFENSE; THEY REMAIN VULNERABLE, EXPOSED. THAT IS A SUPERIORITY WE SHOULD KEEP. CARRIER PLATFORMS, LOW OBSERVABLES, THE STRIKE MUNITIONS MASTER PLAN, AND AMPHIBIOUS FORCES ARE THE MEANS TO THIS SUPERIORITY. WE KNOW WHAT WE NEED IN CARRIER NUMBERS AND DESIGN. THEREFORE WE SHOULD GET ON WITH BUILDING THEM NOW AND RESOLVE THAT PORTION OF OUR STRATEGIC AND PROCUREMENT PLAN, LEAVING TIME IN THE NEXT FEW YEARS FOR THE MORE COMPLEX ISSUES OF A RADICALLY NEW TACTICAL AIRCRAFT AND LONG-RANGE WEAPONS, AND WHAT EFFECTS THEY WILL HAVE UPON OUR STRATEGY.

VI

A JUDGEMENT ABOUT THE FUNDING OF THE TWO CARRIERS CAN BE ADDRESSED AS FOLLOWS. IF IT IS JUDGED THAT EUROPE IS GOING TO RISE IN MILITARY IMPORTANCE, THEN CARRIERS SHOULD GIVE WAY TO ADDITIONAL U.S. DIVISIONS TO BE STATIONED IN EUROPE, BECAUSE THE EUROPEANS ARE NOT GOING TO DO MORE IN THEIR OWN DEFENSE. BUT WE SHOULD STILL RECOGNIZE THAT THE REALITIES OF SOVIET MASS AND THE LACK OF NATO MANEUVER DO NOT FAVOR AN INITIAL FORWARD DEFENSE WITHOUT INITIATING NUCLEAR WAR. HENCE A U.S. PLAN OR STRATEGY FOR A PROTRACTED CONVENTIONAL WAR IS STILL PRUDENT.
THIS IS AN ISSUE WHICH THE CHAIRMAN OF THE JOINT CHIEFS OF STAFF MUST HANDLE DELICATELY, BECAUSE SUCH A PLAN CANNOT BE ENDORSED BY THE U.S. CINCEUR, WHO IS ALSO THE NATO SACEUR.

ON THE OTHER HAND, IF IT IS JUDGED THAT THERE IS A MUCH HIGHER CHANCE OF A BRJIEF U.S. - SOVIET CONFLICT OUTSIDE EUROPE AND THAT ANY LARGESCALE US - SOVIET CONFLICT WOULD BE GALOBAL AND PDOTRACTED, THEN CARRIERS PROVIDE THE UNITED STATES WITH A TWO-EDGED SWORD: A MOBILE AIR UMBRELLA TO TRANSPORT TROOPS AND MATERIALS WHEREVER AND WHENEVER WE WISH, WHILE DENYING THE SAME TO THE SOVIETS, AND A STRIKE PACKAGE SUPERIOR TO ANYTHING THE SOVIETS EMPLACE ON LAND.

THE ISSUE IS WHETHER WE KEEP THIS SUPERIORITY IN POWER PROJECTION OR REDUCE IT IN ORDER TO INCREASE FUNDING FOR A FLAWED STRATEGY THE EUROPEANS SUPPORT INADEQUATELY.

IN SUMMARY, MR. CHAIRMAN, I WOULD SUGGEST THESE THOUGHTS.

1. NUCLEAR WEAPONS, WITH THEIR TERRIFYING DESTRUCTIVENESS, DO DETER AND HAVE GREATLY INHIBITED THE RESORT TO MAJOR CONVENTIONAL CONFLICT. THERE IS STRONG DETERRENT MERIT IN THE NATO DOCTRINE OF FLEXIBLE RESPONSE. HOWEVER, THE THREAT TO USE NUCLEAR WEAPONS IS THE THREAT TO COMMIT MUTUAL SUICIDE. BY ACCIDENT AS MUCH AS BY DESIGN, AS WITNESSED BY WORLD WAR I, DETERRENCE CAN FAIL.

2. THEREFORE, IN ADDITION TO THE DETERRENT THREAT OF NUCLEAR WAR, THE U.S. SHOULD DEVELOP A REALISTIC COONVENTIONAL WAR STRATEGY. THIS CAN BE DONE QUIETLY BY THE JCS. BUT IT SHOULD BE DONE.

3. PARALLEL WITH THE CONVENTIONAL STRATEGY, WE NEED A MOBILIZATION STRATEGY AND A TRUST FUND.

4. AS WE REDUCE NUCLEAR WEAPONS IN EUROPE THERE WILL BE A TENDENCY TO COMPENSATE BY INCREASING OUR NATO CONVENTIONAL BUDGET. WE SHOULD BE CAREFUL WE DO NOT PAY FROR THIS BY TRADING OFF FORCES WHERE THE U.S. HAS SUPERIORITY TO REINFORCE AN AREA WHERE THE POLITICAL STRATEGY AND THE ATTITUDES OF OUR ALLIES PLACE US MILITARILY IN A DISADVANTAGEOUS POSITION WHICH CAN NOT OVERCOME MODEST BUDGETARY INCREASES.

5. WE SHOULD TREAT THE ALLIED MILITARY DEFICIT - THE REFUSAL OF OTHERS, ESPECIALLY JAPAN, TO DO THEIR FAIR SHARE - AS SERIOUSLY AS WE TREAT THE TRADE DEFICIT.

6. WE SHOULD RECOGNIZE THAT THE MILITARY COMPETITION WITH THE SOVIET UNION IS SHIFTING OUTSIDE WESTERN EUROPE AND WE SHOULD MAINTAIN FLEXIBLE PROJECTION FORCES SUPERIOR TO THOS OF THE SOVIETS.

Senator KENNEDY. That is very helpful.

Dr. Luttwak.

STATEMENT OF DR. EDWARD N. LUTTWAK, SENIOR FELLOW IN STRATEGIC STUDIES, CENTER FOR STRATEGIC AND INTERNATIONAL STUDIES

Dr. LUTTWAK. Thank you, Mr. Chairman.

My own comments will be confined to a lower level of analysis than we have just heard, not the geopolitics of it, nor the grand strategy, but rather, the operational level in regard to the carrier question.

I would, however, like to comment briefly on the presentation that we have just heard from Dr. West. It is a revelation and explanation of the full force of the navalist thrust which has shaped the Reagan rearmament: we have been exposed not only to a very elegant presence and fine analysis (whose central point I agree with) but also to the political appeal of navalism as a compromise between isolationism and internationalism.

The appeal of the argument is this: Gentlemen, you approve of military power to some degree, but some of you do not like to use that military power in order to assist all those overfed and underarmed Europeans; so let us build naval forces to bash Qaddafi and such, a unilateral American enterprise.

Let me turn now to my own narrow points. I think if there is one aspect of the logic of strategy that is familiar to us all, it is that weapons, weapons-types and force-types have a natural life cycle. Somebody invents them, they are developed, they are improved. The personnel have to learn how to use them mechanically, then tactics, and then operational methods are developed and they become more and more powerful.

But then new weapons reach a culminating point of effectiveness, and begin to decline. The paradoxical logic of strategy is at work to ensure that this is so, because it is their very power that inspires the reaction, the countermeasures, that then force weapons down the curve of effectiveness, and into decline.

Now, in the case of the aircraft carrier, the countermeasures include Soviet land-based, long-range aviation. The Soviet Union is a country greatly inhibited by ideology in many ways, but it does not suffer from some of our own bureaucratic inhibitions which, for example, prohibit the U.S. Navy from having land-based strike aircraft of its own.

And of course, there is the great Soviet submarine effort and the cruise missiles that go with it. The totality of this threat could have made the carriers very vulnerable.

If that had happened, we should not thereby be induced to abandon the carrier. After all, the carrier is powerful. That is why the Soviet Union reacts against it. But what has actually happened is that, even though the Soviet countermeasure effort has been very strong against the aircraft carrier, and even though the Soviet countermeasure effort has been able to ride on the general advancement of science and technology, which favors relentlessly, remote sensing remote acquisition, and remote attack—carriers have not become much more vulnerable.

Warships are not 50 times faster than in World War II. Maybe they are one or two knots faster. Carriers have not been favored by science, which has favored the finding of aircraft carriers, stripping away from them their greatest defense, which was to hide in the vast ocean space; and science favors the remote attack, not necessarily from submarine or air-launched missiles, but from land-based missiles, too, as we may envisage for the future.

Now, this vulnerability that would have eventuated in the case of the aircraft carrier, should not induce us to do anything about them one way or the other. The matter depends on these other questions that are geopolitical.

But what has actually happened is that we have not allowed an increased vulnerability for the aircraft carrier. We have resisted the trend, by adding more and more costly escorts and self-defense. We are now at the point where each aircraft carrier should in principle have two Aegis cruisers to protect it.

When we call this ship a cruiser, we are stretching the meaning of the word. It is a floating $1.5 billion electronics data processing center. It is enormously costly, totally disproportionate (even by the rising curve of the cost of weapons) to anything that could be described as a World War II anti-aircraft cruiser.

We now needed two cruisers, four costly super-destroyers, and an escorting attack submarine to protect the carrier. That is the cost that we pay in order to resist the Soviet countermeasure reaction—

which has been aided by the advancement of science and technology which favors anti-carrier forces much more than the carrier.

The worst part of these costs, however, are manifest in the reduced offensive power of the carrier. When one looks at the deck of a *Nimitz* or a *Forrestal* carrier, it bristles with aircraft, and there are more aircraft in the hangar deck, for a total of 90-plus.

But of those 90-plus aircraft, 24 are for the self-defense of the carrier from air attack, a function today represented by the F-14. Then there are 9 or 10 fixed-wing anti-submarine aircraft, also large and costly, as well as 6 or 8 anti-submarine helicopters.

The four EA6-B, electronic warfare aircraft, on board can also perform other missions, but their primary function is to help the defense of the carrier against air attack.

So that the carrier is down to 36 useful aircraft at most, 36 aircraft that can actually serve those purposes of national strategy that have been illustrated by Dr. West and by Ambassador Komer. The rest are all for self-protection.

This is the explanation for this peculiar phenomenon that Ambassador Komer noted, and that is that when one actually tries to use aircraft carrier task-forces in a serious scenario, one commensurate to such a vast force and its vast cost, then one discovers that it has very little striking power.

That of course is a very drastic diminution from the power of the attack aircraft carrier of the 1950's, loaded with attack aircraft. It was all attack; now it is mostly self-defense.

If this process of ever-increasing self-protection continues, and therefore aircraft carriers evolve according to the normal curve of the life cycle of weapons, we will have aircraft-carrier task forces no more vulnerable than they were 40 years ago, but each containing only one attack aircraft, so that if the President wishes to repeat the exploit of Libya we might need ten task-forces—remember, when we did Libya the Navy said the two aircraft carriers were not enough. They wanted three, and they waited until they had the third one. The second time around, there were two carriers plus the F-111's, and that for Libya, which has not yet joined the ranks of the superpowers.

If we envisage an operation against Syria a more serious power, presumably the Navy would want to use nine aircraft carriers. Now, of course I realize that these numbers are the numbers of prudence, and that in wartime the job could be done with less.

But the needs of admittedly prudent planners off Libya reflect the very small fraction of offensive, that is to say useful, power contained in the vast array of each task force, that $17 billion or $18 billion or $20 billion array of various ships, with its 7,000 or 8,000 people afloat. What do they yield you? A maximum of 36 attack aircraft.

Now, all of this would not matter if, nevertheless, carriers were the only way of having air power over the oceans. During World War II, if all of these same conditions would have obtained, we should, nevertheless, have done our best effort to produce the needed carriers.

In World War II we had 92. If current conditions obtained, we would have needed 300. So what? We would still have had to have 300, because in those days land-based air power could only nibble into the ocean space, they could not range over the ocean space, they could not penetrate it, they could not dominate it.

Land-based bombers sent to sink ships hardly ever found them, or they did not hit them. Today, however, the land-based aircraft, can range over the oceans, and bombardment range can be global.

If you ask yourself how much striking air power is needed to do the bombing of Abadan that Ambassador Komer evoked or the bombing of Libya, the answer is that bombers can provide it more cheaply: please do not compare the cost of the bomber with the cost of an embarked A-7, FA-18, A-6 or AV-8, but rather with the cost of all those destroyers, cruisers, and attack submarines in escort, as well as the carrier.

Let me end by taking note of what I consider to be a malpractice, a malpractice of which I hold the Navy entirely innocent. That is the pattern of conduct evolved in the last 30 years, whereby American Presidents confronted by troublemakers overseas, but unwilling to take the risk of attacking them, and equally unwilling to take the political risk of being seen to tolerate injury, have been sending aircraft carriers offshore, to hang about for 100 or 200 days, to the great sacrifice of the people aboard, with more wear and tear of the ships.

This is not, however, gunboat diplomacy. This is not the effective use of naval armed suasion, but rather a game played for the domestic audience. The natives ashore simply ignore the aircraft carrier. The aircraft carrier nevertheless is presented in the following year's budget submission as having been very useful.

Let me therefore end. A glorious and wonderful form of military power is in decline. All who have been aboard an aircraft carrier know how very inspiring it is just to be aboard. But this glorious form of military power has ranged against it not merely the power of the Soviet Union, which is only a tribute to its value, but also the evolution of science and technology that we cannot control.

We have resisted by ever-increasing self-defense expenditure, and by reducing offensive power. Hence, to put on the chart of a global war with the Soviet Union two extra carriers as Dr. West has done, and claim they would extend a non-nuclear defense even by 2 days, only shows how trivial their striking power now is.

But even that grossly inflates the actual power of the aircraft carriers of today, because the level of the shore-based competition has risen so much. Thirty years ago, one American aircraft carrier totally dominated the air power of, say, Syria. Today it would take, I think, six, seven or eight carriers to do an attack of the Libyan kind against the Soviet Union, even all fifteen carriers would hardly be devastating.

I believe that to buy aircraft carriers now that are supposed to be useful for the next 30 or 40 years means investing in a particular form of military power which, however glorious in the past, and thrilling in the present, is destined for a natural and inevitable decline.

Thank you very much.

Senator KENNEDY. Thank you very much.

A very interesting panel discussion. I think our witnesses covered different phases of this whole debate and discussion, and I think we are the wiser for it.

We will run by the 6-minute rule, and we will leave the early bird selection to our very able staff. People have been arriving and leaving, so we will depend upon the staff to watch everyone to make sure that we conform with the overall committee rule.

I think we will probably just have time for one or two questions. I would be interested in the response from the panel. I think that many of us would believe that it would be nice to have the two carriers. I do not think many of us doubt that it would provide some enhancement for our national defense.

The question is, where do we hurt the most as a Nation with respect to our national defense? The answer to the question is clear. I think right now we are probably hurting more in our land forces.

I do not dispute that two new carriers is a good idea. The question is whether there is a better idea, and to me that is something which we are going to have to take a look at.

If we say that the Navy position has historically been a 3 to 1 ratio of total carriers to peacetime deployment, so you have four deployed for 12 carriers, five deployed for 15 carriers, each battle carrier costs about $20 billion, we move from four to five in peacetime deployments—this is assuming now that we even retain the 15 capability rather than the 12—we are really talking about $60 billion.

And the question comes back as to whether the four is enough. But that is a different way of looking at the expenditures, and I think is a fair way of looking at it. I am interested in that as a premise that the Navy has used in the past.

I would be interested in the panel's response to what Admiral Crowe had mentioned in his memorandum of October 14, when he said:

> I, for example, when painful choices have to be made, I would give first priority to sustainability, modern munitions, ASW, and the SSN program. In essence, I believe that we need to see the full spectrum of the Navy's programs before making a decision that will lock us into a long term major commitment.

In fairness to Admiral Crowe, he has testified in favor of the two aircraft carriers. This memorandum was prior to the time, as I understand it, where he was part of that decisionmaking process.

What is your reaction, each of your reactions to at least his sense of October that, "when painful choices have to be made, I would give first priority to sustainability, modern munitions, ASW, and the SSN program," based against the larger balance of what we are talking about in figures? And that is not just the few hundred million we are talking about in this budget, but the larger kind of commitment over a period of time.

Just very briefly, Ambassador Komer.

Ambassador **Komer**. I go with Admiral Crowe. He has got the way to go. What made him change his mind?

Senator **Kennedy**. Mr. West.

SUSTAINABILITY AND MUNITIONS

Mr. **West**. Senator, I cannot address the ASW, but I can address the sustainability and munitions, because that is what I am on the board of overseers of the Center for Naval Analyses. And some of the most recent studies about this whole issue, at a classified level, do not sustain Dr. Luttwak's basic point.

His basic hypothesis was that all tactical air—the carrier is just a platform—is becoming less and less relevant for striking, and that gets to the whole issue of priorities toward sustainability and munitions.

The classified evidence indicates that in the 1990's, with what we are doing with the modern munitions, we are going to be in a better position with strike warfare than we have been for the last two decades.

I would agree in terms of the priorities, but all the evidence I have had presented to me indicates that those are indeed the priorities.

Senator **Kennedy**. Dr. Luttwak.

Dr. **Luttwak**. The priorities that the Chairman offered—Mr. Chairman, I mean the other Chairman, of the Joint Chiefs—were priorities within the Navy, the world of the Navy. But for the wider fore-wide priority, the choice is purely political.

Do you wish to expend moneys to be able to defend Europeans better, or do you wish to expend moneys to be able to bash Libyans? That is the choice. It is a purely political choice. Strategic analysis is neither here nor there.

A footnote. I was not referring to tactical air power in general. My testimony was confined to naval tactical air power, that has to be provided by such a large quantity of shipping over and under the water in order to stay afloat in present-day conditions.

Thank you.

Senator **Kennedy**. Senator Warner.

Senator **Warner**. Mr. Chairman, I am going to stay throughout. I would like to defer to the distinguished ranking member of this subcommittee.

Senator **Cohen**. Thank you, Senator Warner.

LAND FORCES

The Chairman suggested that we need more land forces. Ambassador Komer, you served in the Carter administration. Dr. Brzezinski recently testified before this committee that he wants to withdraw about 100,000 men out of Europe.

Where would you want to put those 100,000 troops?

Ambassador **Komer**. You better ask him that question, because I flatly disagree with his recommendation, as I do with many of his recommendations.

Senator **Cohen**. You disagree with most of Dr. Brzezinski's recommendations?

Ambassador **Komer**. I would not say most. I have never totted it up, but I sure disagree with plenty.

PERSIAN GULF

Senator **Cohen**. Was it a mistake for President Carter to declare the Persian Gulf to be in our national security interest?

Ambassador **Komer**. That is a good question. And when he made that statement we had zip capability to execute anything in the Persian Gulf. I think it was a magnificent deterrent statement. I think it registered in Moscow because he said it, because the Soviets tried to figure out how we would do it. That would have taken quite a while. But I thought it was great.

What it suggests is, you know, that if we want to broaden our deterrent we can make similar statements about all sorts of places.

Senator COHEN. So we should just declare that we have got an armada to send into the Persian Gulf and let the Soviets worry about it?

Ambassador KOMER. I do not think we have an armada to send into the Persian Gulf.

Senator COHEN. But the point is that President Carter declared the Persian Gulf to be in our national security interest. You have written articles critical of the fact that our resources do not measure up to our responsibilities.

Ambassador KOMER. That is correct.

Senator COHEN. I assume that is one responsibility we should not have?

Ambassador KOMER. No, we have a lot more to do it with now.

Senator COHEN. Would you advocate that we do more in the way of defending the Persian Gulf?

Ambassador KOMER. Yes, I would think so.

Senator COHEN. Now, let me ask you how you want to go about doing it. Would you like to build some bases in Israel?

Ambassador KOMER. No.

Senator COHEN. Saudi Arabia?

Ambassador KOMER. Yes.

Senator COHEN. Oman?

Ambassador KOMER. Yes.

Senator COHEN. Bahrain?

Ambassador KOMER. Yes.

Senator COHEN. Have you talked to any of those countries in terms of what they feel about an American presence on their soil?

Ambassador KOMER. I was barred from talking with them by the Secretary of Defense. And I raised hell with him because I thought he was not talking to them about the right things.

I would say the single greatest deficiency in our ability to execute our contingency plans in the Indian Ocean is the lack of any peacetime basing except Diego Garcia. And I got that for the Navy; they never said thanks.

Senator COHEN. It comes back to the problem, what are we to do to enhance our ability to project force in the Persian Gulf?

Ambassador KOMER. Well, I would have worked on the Saudis, and the Omanis did help out, you know. They gave us facilities in Oman.

Senator COHEN. Do you think the royal family will stay in power if we put some U.S. bases on their soil?

Ambassador KOMER. In Oman, yes.

Senator COHEN. No, no. In Saudi Arabia?

Ambassador KOMER. Yes. That is a high risk statement, but yes, I do. And I was responsible for the area of the world in the Kennedy-Johnson NSC staff.

Senator COHEN. Dr. Luttwak, you have indicated that air power should be land-based, and it seems to me that you are suggesting that it be based here in the United States.

Dr. **Luttwak.** Sir, we have aircraft carriers. They have utility for many purposes.

Senator **Cohen.** I did not gather that from your statement.

Dr. **Luttwak.** No, we have them. We have paid the very high cost of resisting the counterforces ranged against them. The question now is whether we should begin purchasing more aircraft carriers, whose utility can only be accomplished over the next 20, or 30 years, when the curve will really be so much against them.

And to that I say no. We have a bureaucratic convention, that the U.S. Navy is prohibited from owning land-based strike aircraft.

If we abolish that convention and the Navy is free to expend moneys for land-based, long-range, strike aircraft, I believe that the Chairman's list of other things he would spend money on would also include land-based strike aircraft because today's aircraft——

Senator **Cohen.** Where would we base them?

Dr. **Luttwak.** We would base them in the United States, Hawaii, and sovereign type bases on Cyprus and elsewhere.

Senator **Cohen.** England, by way of example, now with the Labor Party in England that would like to kick out all of——

Dr. **Luttwak.** Senator, let us think of a specific aircraft.

Senator **Cohen.** England. Let us talk about a specific country.

Dr. **Luttwak.** We are talking about something like the Stealth bomber, an intercontinental machine. They can have multiple missions. We would probably base them in the Midwest.

Senator **Cohen.** So we are talking about——

Dr. **Luttwak.** A safe American base.

Senator **Cohen.** As far as naval power or air power is concerned, they would all be based in the United States?

Dr. **Luttwak.** Yes. But the United States is a large place. Hawaii, you know—it expands over the Pacific.

BASES IN SAUDI ARABIA

Senator **Cohen.** Mr. Komer, one final question. I was curious, why would you want to build bases in Saudi Arabia, but not in Israel?

Ambassador **Komer.** That is a tough question. Let me answer your previous question.

I think I would like to base them in Maine at an Air Force base, and I would like to base B–52's up there.

Senator **Cohen.** We will even take the Stealth, if that is what you want to do.

Ambassador **Komer.** Well, Tennessee has a lock on that.

But Israel is not properly located for basing purposes for a Persian Gulf contingency.

Senator **Cohen.** As compared to the United States?

Ambassador **Komer.** No, as compared to what you compared it to, to Saudi Arabia. One is on the eastern side of the Arabian Peninsula and the other is on the western side.

Senator **Cohen.** What would be the relative security of a base in Israel versus one in Saudi Arabia?

Ambassador **Komer.** You are allowing us to send some air policemen there and have a battalion of infantry and things like that? I do not think it would make much difference. Local security is better in Israel.

I would have great reservations over fixing our response strategy in the Persian Gulf to Israel. They have different objectives than we do, as is patently apparent in the case of Iran.

Senator KENNEDY. The Senator's time has expired.

Senator Levin.

Senator LEVIN. I think the issue actually that we are facing is somewhat different from the issue which we spent some of the time on at least today. The issue is not whether we procure additional aircraft carriers. The issue is whether we accelerate by 4 or 5 years the procurement of additional aircraft carriers.

We have been told right up until a few months ago that to keep the 15 carrier task forces in operation we would not have to begin the procurement, to order any new aircraft carriers, for the next 5 years. Suddenly we are told, we want to buy two of them now.

Now, that does get into questions of the vulnerabilities and the value of aircraft carriers to a degree, but frankly, not nearly as much as it gets us into the question of how we want to spend our defense dollars and, if we change those priorities to do what we do not have to do, still keeping the carriers at 15 task forces, whether we are losing something else that is of great value.

So I happen to believe that aircraft carriers perform a useful function. I believe they perform a useful function, and I believe we should maintain aircraft carriers. I do not put as much emphasis on them as you would, Dr. West, but I think they perform a useful function.

And the question we have to face is, how is it that 3 months ago and for the years before that we were told that to maintain 15 carrier task force groups that we do not have to procure any new aircraft carriers until the early nineties, and now suddenly, as though by magic, there is two new aircraft carriers in the budget at $7 billion?

Now, I know all this $7 billion is not in there this year. Just the down payment is in there this year.

Now, Dr. West, because I think that is the issue, whether we accelerate the purchase by 5 years of two new aircraft carriers, I want to address my questions to you. Would you not agree, and getting to your last question, the last question you got to, which is, well, if you want to buy aircraft carriers which serve a useful purpose, the question is the budgetary question.

Do you save money by buying them now rather than later? The answer is of course, yes, you do. You save money by buying anything now rather than later. The question is, if you accelerate two aircraft carriers, what are you delaying and at what cost? What are you stretching out and at what cost? What are you canceling and at what cost? What munitions are you not filling, and at what cost? What depot maintenance are you not doing of your basic weapons systems, and at what cost?

Those are the issues that we have to face. And I am wondering, doctor, whether at least you would not agree to that much in your presentation, that it is not just enough to simply say aircraft carriers perform a function, if you can buy them more cheaply now rather than 5 years from now you might as well do it and save the money, but that we also have to work into that decision what are we delaying, what are we shorting, what are we going to spend more on as a result later if we start on those carriers now?

Is that not an important issue to us? Would you agree?

Mr. West. Yes, sir.

Senator Levin. Now, the second question is this. You say that the JCS ought to come up with a new strategy for conventional deterrence, and I happen to agree with you, by the way.

CONVENTIONAL STRATEGY

One of the points you made is that new conventional strategy may cost us some money. And I think your words were that it would include some costs, it may include some costs. Did I hear you correct?

Mr. West. That is one way, sir. Of course, the services could always use more, but I was referring to another kind of costs. By definition, since democracies do not sacrifice totally for war during peacetime, there would have to be another kind of cost, either the danger of nuclear war or losing territory when a war begins, those kinds of costs.

Senator Levin. Is it also possible or likely that a new conventional strategy, as you phrase it—and I happen to agree with you that we should put more reliance on a useful conventional strategy, and we do not have one quite yet—but that may cost us some money in terms of conventional weaponry?

Are you suggesting we could have that 75 percent chance instead of a 50 percent chance without any additional financial cost?

Mr. West. I believe, Senator, that one can design strategies and recognize the risks one is running and not have to add additional moneys to it. In other words, I would feel more comfortable, even if the budget did not go up at all, if the Chiefs had thought their way through a conventional strategy.

Senator Levin. Is it possible at least that such a conventional strategy may require us——

Mr. West. Oh, absolutely, sir.

Senator Levin [continuing]. To invest some money?

Mr. West. Yes.

Senator Levin. So at least that possibility is out there.

Mr. West. Yes, indeed.

Senator Levin. We may need some billions of dollars for a strategy which relies less on nuclear weapons and more on conventional capabilities?

Mr. West. Yes.

Senator Levin. Thank you.

Thank you, Mr. Chairman.

Senator Warner. First I would like to go back to the memoranda that was distributed here bearing the signature of the Chairman of the Joint Chiefs, Admiral Crowe. You will note that memorandum was issued in October.

REPLACING TWO CARRIERS

In January of this year, I had the opportunity to question the Chairman at an Armed Services hearing, and specifically on the subject that we have before us today, namely the need to replace—and I stress, replace—two aging carriers.

I suggested to the Admiral that, if Congress failed to do this and we had to drop to the number of 13, what would be the consequences? The Chairman replied:

> Well, it would considerably reduce our ability to do the kinds of things, for example, we have had to do in the last year, Senator, reduce our ability.
>
> I find it a little curious, some of the criticism of the carrier in a period, in an era where we are at the same time stressing our war against subversion, terrorism, limited intensive conflict, our ability to project influence, to move around the world and react in remote locations.

Now, there was mention here about land-based aircraft. A little history I think is helpful from time to time. I asked him about the Vietnam era and he said:

> Yes, that is correct. Carriers are not invulnerable. Carriers indeed could be sunk. But land bases can be destroyed. I was in Vietnam. We lost 400 planes on the ground in Vietnam and some 4,000 planes, U.S. planes, damaged in the course of that conflict from ground action. We did not lose any planes on carriers to ground action.

Now, a little history. Dr. Luttwak, if you trace military history from World War II, we ended up with some 5,000 ships in the United States Navy, 92 of which were large decks and the old Jeep carriers. I remember them well. Many battleships and cruisers. And our Navy by necessity scaled down.

SOVIET NAVY

The Soviets at the end of World War II hardly had a ship. They really had a coastal fleet and a canal fleet for resupplying the Red Army. As a matter of fact, I have had the opportunity to meet Gorshkov, and he was a young officer in those days and his command was basically a coastal navy and an internal navy for the canals.

What did the Soviets do following World War II? They recognized the importance of maritime strategy and went from a navy basically of zero to where they are today on the high seas throughout the world and challenging our Navy in almost every port and every ocean.

Likewise, in the field of nuclear weapons we were supreme at the end of World War II. We had the technology. Again, the first thing the Soviets devoted their resources to was to build their own strategic operational offensive forces.

Each time the Soviets have tracked the United States. And now what are they doing today? The same thing, following the United States.

My question to you: If you denigrate the role of the carrier, why has the Soviet Union today built a navy of the magnitude of ours, when their allies basically are reachable from a land communications system, when their forces are not forward deployed? And why, sir, are they building heavy carriers?

Dr. **Luttwak**. Senator, I offered the land-based strike aircraft as an alternative to that particular mission. My advocacy would not be to reduce our effort in maritime power at all, merely to react to the independent evolution of science and technology and place our maritime power above the water and below the water, but not to the surface where it is vulnerable and speed-limited, to be sensed and found remotely and struck remotely.

That is the context. The 92 large aircraft carriers and Jeep carriers that the U.S. Navy had on VJ Day 1945 it acquired from 1940 onwards and by wartime improvisation. Its program, however, was for 15 battleships. The prewar Navy wanted 15 battleships. It did not want 15 aircraft carriers, let alone 92 aircraft carriers.

What happens is that men become attached, because of a natural and commendable loyalty, to a particular form of maritime power. Before the war they became attached to the battleship. Now they are attached to the aircraft carrier.

Do we need maritime power? Yes. Do we need a lot of it? Certainly. Should we remain attached this time around again to today's classic form, and repeat the mistake of the previous generation, or should we acknowledge that there are new forms of naval power under the water and over the water?

Now, on the Soviets, experts on the Soviet Navy, of which I am not one, experts on the Soviet military budget, ditto of which I am not one, have been telling laymen such as myself in their publications, research reports, classified and not, that Soviet expenditures on maritime power had peaked several years ago and are in decline; once again, it appears we have been witnessing a Russian adventure at sea, one of these Russian fleets that arrives and swells and then wanes, because their priorities, of course, are on land.

And their great effort has been, of course, to acquire a non-nuclear war-winning capability on land. That I think we should match unless we mean to accept either defeat or the forced resort to nuclear weapons.

For example, to purchase these long lead items on these particular carriers, we are, for example, cutting back on the acquisition of tanks for the Army.

Senator **Warner**. Let me have one more question, to Mr. Komer. Mr. Komer, you recognize that it takes three carriers in the fleet at any one time to keep one carrier forward. Basically, one has to be under repair and one in upkeep, ready to transit out.

Now, if we reduce the number there are only two options: One, to stretch further the time on station, and I think you agree that is insufferable in terms of the crews and the family back home. Would you agree with that?

Ambassador **Komer**. Yes.

Senator **Warner**. Second, the other option would be to reduce our commitments. Now, if we go from 15 to 13, what are the trouble spots in the world in your judgment that have improved so much in the last year or two that in the next four or five years we do not have to have a carrier nearby?

Ambassador **Komer**. I would say that in the Indian Ocean——

Senator **Warner**. That is the Strait of Hormuz, through which we get the oil for most of the free world?

Ambassador **Komer**. Yes. We could do without a two carrier task force. We could do with one.

I would want to pull a carrier out of the Med. I am not greatly excited about scaring Qaddafi. I am not sure about——

Senator **Warner**. Let us stop with the Strait of Hormuz. You are willing to take the risk to have those straits closed and the impact on the world oil supply and driving up petroleum prices around the world and the effect on the economies of many nations? Is that a risk that you are willing to assume?

Ambassador **KOMER**. No, Senator Warner, not the way you defined it.

Senator **WARNER**. Well, a carrier on station there in the Indian Ocean is one of the major deterrents of the closing of those straits, is it not?

Ambassador **KOMER**. I do not think so.

Senator **WARNER**. Well, we will debate that on someone else's time. My time is up.

Ambassador **KOMER**. Let me tell you about the Soviet carriers, however. The reason why Gorshkov proposed building carriers was because we were building, and he knew that there must be something convincing about why the American Navy was building them. If they are good enough for the Americans, they are good enough for the Russians.

Senator **WARNER**. Maybe it is 40 years of stability and peace in NATO that induced him to build them.

Senator **KENNEDY**. Reference has been made to Admiral Crowe, I think just from a personal point of view, the one statement that he made prior to the time that there had been a Defense Department position. And I think it is of some relevancy that he was the commander in chief of the Pacific and had a full understanding of the aircraft capability.

Just to complete one question that Senator Warner asked, just for my own information, are there other alternatives, such as homeporting aircraft carriers overseas?

Ambassador **KOMER**. Yes.

Senator **KENNEDY**. And also, moving crews overseas to deal with this problem about the matter of time?

Ambassador **KOMER**. Our SLBM's have two crews.

Senator **KENNEDY**. I think I just wanted to get this point in the record, because I know that will be a matter which will be talked about.

Senator Exon.

Senator **EXON**. Mr. Chairman, thank you very much.

Gentlemen, thanks for coming. I have been listening with great interest to the overall discussion, which it seems to me has gone far, far beyond whether we should buy two new aircraft carriers. We have to go back into the background to get at all that, I guess.

It is very good to see you, Ambassador Komer, once again. I am delighted to see you have not mellowed at all over the years. It is always wonderful to see some things remain the same.

AIRCRAFT CARRIERS NEEDED

Let me ask a question first. You all think that we need a substantial number of aircraft carriers, do you not?

Mr. **WEST**. Yes.

Ambassador **KOMER**. Yes.

Senator **EXON**. I take it that Ambassador Komer thinks we could get by with 12 or 13?

Ambassador **KOMER**. Twelve.

Senator **Exon**. Mr. West, Dr. Luttwak, what do you think?

Dr. **Luttwak**. I believe that we could do—we could tolerate a decline of the force to 13 if we had to.

Senator **Exon**. Mr. West, I assume you think the 15 is a minimum?

Mr. **West**. Senator, I think it would be imprudent to go down to 13.

Senator **Exon**. I was kind of puzzled, Mr. Komer, by your endorsement of the Carter doctrine with regard to the gulf. But you seem to concede that we did not have anything to back that up with.

I was also struck by Senator Warner's question to you about the carrier in the gulf. I was under the impression—and maybe it is a misimpression—that Diego Garcia, as important as that is, is a long, long ways from the gulf. Since we do not have any operating bases near the gulf, the aircraft carrier that we have stationed there and the threat of those planes attacking, if need be, was the only thing that proved our presence in the area as of right now.

Supposing we would take the aircraft carrier out of there tomorrow, out of the Indian Ocean. Would there be anything to enforce the Carter doctrine?

Ambassador **Komer**. B-15's—B-52's.

Senator **Exon**. You think that a B-52 operating from the United States could enforce that Carter doctrine?

Ambassador **Komer**. Yes, sir. Well, not by themselves.

Senator **Exon**. As well as an aircraft carrier in the Indian Ocean at the mouth of the gulf?

Ambassador **Komer**. Yes, because they would have greater flexibility with respect to target systems.

Senator **Exon**. What about Mr. West and Dr. Luttwak? Do you share the view that it is not important for us to have an aircraft carrier near the mouth of the gulf?

RAPID DEPLOYMENT FORCE

Dr. **Luttwak**. Senator, I am really unable to understand this dialogue or indeed the previous one. The principal instrument for the enforcement of the Carter doctrine was the formation of the Rapid Deployment Force, for which purpose we have organized the Seventh Light Infantry Division among other forces.

We have given this as a mission to the 82nd, and to the 101st as a backup. We have made arrangements and plans for the rapid deployment of land-based air power, precisely because of the Navy's recognition of its inability to generate useful numbers of attack sorties in the gulf.

Our principal force for intervention in the Persian Gulf is the Rapid Deployment Force, with up to 100,000 people that could be deployed through the Mediterranean by way of Egypt or possibly other countries, or out from the Pacific and up the gulf, or over Pakistan by air means, with land-based air support inserted.

We have no political permission to do any of this now. Presumably we would have it if the region were facing a Soviet invasion.

And therefore the issue of whether or not, in addition to all of that, one also has a carrier which has on board 34 aircraft that may perform perhaps 35 or 50 missions or 70 missions for 48 hours before having to stand down, with a few minutes loiter time at the head of the gulf, that really would be a very marginal addition to that principal capability.

Senator **Exon**. Well, I can only sum up your statement, then, by saying that you basically agree with Ambassador Komer that an aircraft carrier at the mouth of the gulf is not a significant deterrent to troubles in that area. Is that true?

Dr. **Luttwak**. I am basing it, sir, on what the Navy told me in the past when I posed the question of how much air power we could get at the head of the gulf from a carrier at the mouth of the gulf.

Senator **Exon**. So it is there partially as a tripwire, I guess.

Mr. West.

Mr. **West**. I am beginning to think, Senator, that we have apples and oranges and bananas all before us, trying to sort them out.

Senator **Exon**. That is what I am thinking, sitting up here. And I am trying to get it straightened out.

Mr. **West**. Dr. Luttwak keeps coming back to one essential point that I fundamentally believe is incorrect. His interpretation of science and technology, as being a determining factor, means fewer strike aircraft on carriers, with lesser effectiveness.

All the classified evidence that I see does not substantiate that hypothesis, nor does it substantiate the other hypothesis that seems to be there: that somehow if these aircraft are land-based they do not suffer from these same defects that they do if they are sea-based.

That is something this panel as a whole may ask about in a classified session and talk about. What is the future of our strike aircraft? Is it improving or getting worse every year? I think it is a fundamental question which goes far beyond where we can go at an unclassified level.

But the evidence I have seen does not substantiate the fundamental hypothesis.

Now, about the Persian Gulf, the first issue is not the Soviets. The first issue is that Iran wants to win that war against Iraq and it is putting heavier and heavier pressure against the shipping on the gulf as a means of blackmailing some of the smaller countries on the other side of the gulf so that they will cease and desist from their support to Iraq.

That gets to the point of the Silkworm missile, which many people have been concerned that the Iranians may try to emplace, not at the headwaters where Iraq is, but at the straits near Oman.

There is no doubt in my mind that one of the greatest deterrents to that emplacement is not the fear one of these smaller states will send in attack aircraft, but the fact that there is an aircraft carrier sitting there, flying sorties, picked up on Iranian radar. The Iranians know that we are watching that emplacement very, very carefully.

So before we leap to this huge scenario about the Soviets invading, therefore we have to use the entire Rapid Deployment Force, I think we should stay with today's problem: containing Iran. And the operative actions there have to do with the deterrence. And part of that deterrence is having an aircraft carrier there so that

Iran does not put more pressure on shipping and does not emplace Silkworm missiles right along the Strait of Hormuz.

Senator **Exon**. Let me ask you a quick question. My time is up and maybe you can just answer in a word or two, each of you. And I appreciate your being responsive.

I happen to feel that we should not go below 15 carrier groups. That is my opinion. I could be wrong. But if we are going to stay at 15 carriers, maybe we could get by for a while without building two replacements now.

Given the budget crunch, do we move up and authorize two new carriers now, or could we get by with patching up our older ones for a few more years?

If we are going to maintain 15 carrier battle groups, could we patch up the two oldest ships we have out there right now and maintain our present strength without ordering two new ones in this fiscal year?

Ambassador **Komer**. I think we just patched up the *Midway* at Yokosuka, and that was one of the ships that I believe we were going to replace. It was not a very good patch-up job.

Yes—this is a technical question and I do not feel at all confident of my answer. But I would rather look at all sorts of alternatives to building two new carriers.

Senator **Exon**. Thank you.

Senator **Kennedy**. Senator Quayle.

Senator **Exon**. Could I have an answer from the other members of the panel?

Senator **Kennedy**. Sure.

Dr. **Luttwak**. Not qualified.

Mr. **West**. Neither am I, Senator. If the Navy took this out of its own budget and somehow rearranged its own budget and did it by slowing down tactical aircraft procurement, then from some of the evidence I have seen that may have been a wise decision to make.

Senator **Exon**. Thank you.

Thank you, Mr. Chairman.

Senator **Quayle**. Thank you, Mr. Chairman.

CRUISE MISSILE

Let me try to see if I can get some consensus out of our three distinguished panel members, and to ask a question concerning the application of the cruise missile, specifically to the carrier itself, and more generally to our maritime strategy.

My question is, are we in fact doing enough in advancing the range, accuracy, and mission planning flexibility of the cruise missile, working on the conventional application of the cruise missile, particularly on the carrier with the A-6, and what we should be doing in the whole cruise missile arena vis a vis the carrier and our entire maritime strategy?

I would be curious if we might see if we can get some agreement. Or maybe there is a divergence of opinion on what we should or should not be doing. My bias is that we can be doing a lot more.

That is where I am coming from, and I wondered if we might be able to get your views—Ambassador Komer, do you want to go first?

Ambassador **Komer**. The fellow you ought to talk with about that is Bud Zumwalt, former Chief of Naval Operations. He has written lots of articles and given lots of lectures saying, among other things, that he thought we were making a mistake by going for big carrier platforms, that he thought putting cruise missiles on all sorts of Navy ships, including submarines, destroyers, et cetera, was a much better way of delivering firepower both at sea and on shore.

Senator **Quayle**. How about the cruise missile on the A–6?

Ambassador **Komer**. That is a technical question. It is a big missile. I do not know if you could carry it anywhere on the A–6.

Senator **Quayle**. Well, assuming technically that you could.

Okay, Mr. West, how about the general approach to the cruise missile, particularly the carrier aspect and then the entire maritime strategy?

Mr. **West**. In general, Senator, I support moving faster in terms of long-range, accurate, low observables with improved high explosives. And I would not limit my target set to countries outside the Soviet Union if you had that capability.

I do think that you divide your systems of striking into three different areas, generally called: the silver bullets, and any such of these cruise missiles would always be ranging between $500,000 and more, so they will always remain bullets that you can only use against very, very high value targets; and then what they call the bronze bullets, which are really air to air missiles; and then finally, the enormous amount of high explosives that I believe you always need on your battlefield, and we will never get away from needing just an enormous amount of high explosives on any infantry battlefield.

But I do believe that there is an absolutely good role for longer range, accurate cruise missiles.

Senator **Quayle**. Do you think we are making enough emphasis on this?

Mr. **West**. There is, sir, in the Navy something that your staffs may want to look at, the munitions strike master plan, which they have finished and which I think does address that issue.

Senator **Quayle**. Dr. Luttwak.

Dr. **Luttwak**. I have no doubt that within that modern form of naval power whose emergence is being retarded by the loyalty to a classic form of naval power, cruise missiles will play a large role. However, if you were to go through the tactical stops of employing them, I think you would soon discover that, whereas further improvements in the accuracy of very accurate systems may be worthwhile, the real challenge is to have eyes over the environment, that is to say target acquisition, command, and control for cruise missiles.

And indeed, that modern form of naval power, whose emergence is now being retarded, would in fact integrate satellites, other forms of observation, with means of attack such as cruise missiles.

Half a million dollars is very cheap when you are not risking an aircraft over the target. Therefore, I do not think that the specific technical focus on accuracy may be particularly the leading salient priority. But I think when you speak of cruise missiles you are automatically invoking, I think, the correct form of power—cruise missiles launched from below the water, cruise missiles launched from above the water.

Senator **Quayle**. And even cruise missiles launched from the water?

Dr. **Luttwak**. From the water. We have many ships. Do we propose to scrap them? No. Should we put cruise missiles on them? Yes.

Do they justify remaining in the unfavorable environment, the most unfavorable environment for the next 40 years? No. What we are dealing with here, Senator, is an understandable irrationality. The people of naval aviation are not 9 to 5 people. They are deeply dedicated. It is not only their job; it is their vocation, a vocation and passion.

And they are protecting the particular form of the carrier. And one of the things whose emergence is thereby impeded is the proper and full application of the technologies associated with this word "cruise missile."

Senator **Quayle**. Thank you, Mr. Chairman.

Senator **Kennedy**. Senator Shelby.

Senator **Shelby**. Thank you, Mr. Chairman.

I have just gotten to the hearing. I have been in some other committees, and you will have to pardon me if you have already gone into some of this. You could have.

CARRIER VULNERABILITY

I am interested in the carriers, how vulnerable they are or could be. We all know that we have got some hard choices to make up here because of budget constraints. If they are so vulnerable, which some of us feel that they are, if you had to make your hard choices because of budget constraints what is the most essential element for our national security?

Is it carriers, is it attack submarines, is it more Tridents? Or is it some of everything? Dr. Luttwak.

Dr. **Luttwak**. I have argued, that the problem is not the vulnerability of the carriers, but rather the rising and increasingly disproportionate cost of containing that vulnerability.

However, the answer to your question: what will be the modern form of naval power? It must be below the water as submarines and above the water as aircraft. And I say, let us remove the artificial prohibition that prevents the U.S. Navy from following the Soviet Navy and other navies in having combat aircraft based on land, including those of intercontinental range.

Mr. **West**. Again, between Dr. Luttwak and me there is this fundamental question of whether the most unfavorable environment is the surface of the oceans. That is a hypothesis. I do not understand it, because the air seems to me to be equally as vulnerable.

Anything detected in the air is also detected on the surface of the oceans, and anything in the air has to come back to a base. And if that base is not moving on an ocean, it is very fixed.

The belief that we avoid the fixed base vulnerability by stationing these things in the United States and launching war directly from the United States strikes me as being high risk from a lot of different ways.

In terms of the mix question that you ask, do you keep a little of each, the answer is yes, sir. I think we do a little of everything.

Senator **Shelby**. Do we have a little of each right now?

Mr. **West**. Yes, sir, we do a little of everything when we are going up in a budget, and I think we will probably do a little less of everything when we come down on a budget.

Senator **Shelby**. But with the budget constraints, do we have to have these carriers now? I know it is an ongoing program. I know it takes a long time.

Mr. **West**. That is a tough question.

Senator **Shelby**. That is one we are going to have to answer.

Ambassador **Komer**. I do not think we need them right now.

Senator **Shelby**. Is that because we have enough carriers for the moment?

Ambassador **Komer**. Yes.

Senator **Shelby**. Does that go to the vulnerability problem, too?

Ambassador **Komer**. Somewhat, somewhat, although I am not—the Navy spends one hell of a lot of money on addressing that vulnerability problem. I am inclined to think they have done a pretty good job.

But I could use $7 billion in lots of ways. I would buy minimum essential ammunition and spare parts for all the services. It might come to about $7 billion. I have never been able to understand this predilection on the part of the defense leadership and the Congress and the services to spend all these billions on anything—tanks, carriers, airplanes—and to not buy them enough ammunition. That is crazy.

Senator **Kennedy**. Ambassador, I think my cigar smoke just got you. [Laughter.]

TRIDENT SUBMARINES

Senator **Shelby**. Should we put some additional priority on more Trident submarines, since they are of the strategic nature?

Ambassador **Komer**. No, sir.

Senator **Shelby**. Why?

Ambassador **Komer**. Because I think we have built and funded just about the right number of Trident submarines. I do not think it is a tradeoff.

I would put more money into cruise missiles. But I would put a lot more money——

Senator **Shelby**. You would put more money in cruise missiles, and you would put those cruise missiles both in the air and on the sea?

Ambassador **Komer**. And underneath. I would buy a lot more military assistance.

Senator **Shelby**. For the dollar, you would get more bang for the buck, would you not?

Ambassador **Komer**. Yes. I think military assistance is one of the most underestimated expenditures we make.

Senator **Shelby**. Has the cruise missile potential been somewhat neglected, considering its lethal potential?

Ambassador **Komer**. I do not know the answer to that, but I would suspect so.

Senator **Shelby**. That is all I have.

Ambassador **Komer**. Not so much by the Navy, which has the biggest cruise missile program, but by the Air Force and by the Army.

Mr. **West**. Senator, could I add something?

Senator **Shelby**. Sure, go right ahead.

MUNITIONS

Mr. **West**. I had it in my statement about munitions. I have watched these munitions in all the services wax and wane. We will never have enough munitions, especially the smart munitions, for when a major war begins. Then when we ask, how long is it going to take to produce, people say up to 24 months because of all the bottlenecks.

I would strongly suggest that, when putting money into munitions, we do exactly what we do on the defense security assistance account: we establish a trust fund at one percent of the munitions accounts and procurement accounts for all the services, that is to be used for the long lead items that you genuinely need if you got into a surge to mobilize.

And after about 6 years of doing that, we would have a trust account that would be enough so we could reduce the mobilization long lead times. Now people moan and groan about 24 months. We could reduce that to 6 months.

Senator **Shelby**. Thank you, Mr. Chairman.

Senator **Kennedy**. Senator McCain.

Senator **McCain**. Thank you, Mr. Chairman.

Senator **Warner**. Mr. Chairman, before the Senator starts, I think the record should reflect that he has flown on and off carriers over 1,000 times. So his questions may be slightly biased.

Senator **McCain**. Somewhat biased, Mr. Chairman.

I would like to thank the chairman for bringing these witnesses before us.

And since I have had the opportunity of listening to most of their responses and unusual statements, I would like to spend the majority of my 6 minutes in responding to some of theirs.

Mr. Chairman, we certainly at least have covered a wide spectrum up here, one witness that wants to go to bases in Saudi Arabia and the other that wants to base the United States air power solely in the United States of America. That certainly covers a broad spectrum of technical and strategic thought.

Obviously, Ambassador Komer does not recall what has happened to other fixed bases that we have had in other countries throughout the world: Wheelus, Danang, Ben Wa, Tuiwa, many others that were left either for the enjoyment of our enemies or were left unused, costing billions and billions of taxpayers' dollars. Unfortunately the situation warranted that our carriers withdraw, and many of them have been doing that for nearly 50 years, including the two that we are talking about replacing, not leaving someplace.

Saudi Arabian politics, particularly with this Iranian threat exerting hegemony over that part of the world, makes it doubtful that the Saudi Arabian royal family is going to allow U.S. bases and personnel based on their soil, even temporarily. Who would think that there is any permanency to that, I think has a very different view than the prevailing view of the situation in the Middle East.

I would also like to address the allegations made by Dr. Luttwak that the U.S. Navy is attached to some classic form of air power. Comparing carrier operations and its utility and its viability and bombs on target by any measurement that you use, Dr. Luttwak, between World War II and today, I think is doing a great disservice to the enormous advances that have been made across the board: bombs on target, ECM, fighter capability, and so on.

And just recently, in the Libyan operation, only by having an aircraft carrier available at the orders of the Commander in Chief, could the Navy provide the options we did.

To dismiss Admiral Gorshkov again flies in the face of prevailing knowledge and thought. Admiral Gorshkov built aircraft carriers because he saw that the way that the Soviet Union could extend power beyond its land borders was through building up a sizable naval force.

Mr. Gorshkov not only understood that, he wrote about it extensively. And to dismiss Admiral Gorshkov's buildup of the Soviet Navy as simply a copycat idea, of course, flies in the face not only of history and testimony on the part of Gorshkov himself, but on what has to be absolutely obvious.

Dr. Luttwak, I would suggest that you consult with the Navy. Seventy missions in 48 hours and then having to stand down is far from the facts. And I also would recommend, as Mr. West has on several occasions, that you go back and read the classified material about bombs on target, bombs on target launched from aircraft based at sea.

I would also like to point out the role of the Navy in the Vietnam war which Ambassador Komer denigrated to some degree. It again surprises me because he has forgotten that for the first 2 years of that war we did not have bases in Thailand. We were spending billions and billions of dollars throughout South Vietnam and Thailand building those bases, so that we would have the capability of land-based air.

And as I mentioned earlier, we left them there when we left, under circumstances that none of us appreciated.

Again, I would like to emphasize that the argument here is whether the U.S. Navy—I am glad, in a way, that it was shaped around the Persian Gulf, because it seems to me that the arguments against two additional aircraft carriers probably would have been more telling if we had talked about contingencies throughout the world.

When Dr. Luttwak says that the RDF was the principal aspect of the Carter doctrine, no one who planned the RDF thought it able to function in the Persian Gulf without carrier support. No one plans on using ground forces without suitable air support.

And I would suggest that air support cannot be obtained from B–52's based in the United States of America, which my Air Force friends who fly B–52's would be intrigued at that, at the length of that flight.

But again, we seem to selectively read our history here, and I am sure it is probably up to different interpretations. But when the RDF was planned and, I am sorry, partly abandoned no one believed that any viable military force could remain in the Persian Gulf in any military operation without air cover. We should pay a lot more attention to it, particularly given the situation as it exists in the Persian Gulf today. And I know of no country, with the exception of perhaps Oman and I think that is a dicey situation at best, that we would be able to get the permission of the host country.

I seem to have used up all my time, Mr. Chairman. And I would be glad, if time allows, to hear the responses to the insults that I have given the witnesses. Thank you, Mr. Chairman.

Senator KENNEDY. Ambassador Komer, we will give you a minute.

Ambassador KOMER. I can do it in 30 seconds. The one thing that interested me was the Saudi Arabian case. Jack, we had a base in Saudi Arabia. It was called Dahrah, and the Saudi Royal family fully acquiesced. I do not recall any objections.

So I would not—Saudi willingness to allow us to go into Saudi Arabia is going to be a function of how scared they are of Iran, of Iraq, or of the Soviet Union. And so our current planning—at least it was at the time when I was around—was that we wait until after the Saudi royal family feels a threat, and they will come to us instead of us going to them.

And in the meantime, we will have built several bases there. You know, the King Khalid military city is being designed by the Army Corps of Engineers. We have had Army engineers in Saudi Arabia for about 15 years, putting in ammunition depots and maintenance facilities and all of that sort of thing.

And I presume that if the Saudis had an alternative, to be occupied by the Soviets or let us use their facilities, they would be more willing.

Senator KENNEDY. Dr. Luttwak.

Dr. LUTTWAK. On the specific factual point, the air power for the RDF was not to be provided only by B-52's from stateside, but also from expeditionary Air Force contingents that would enter bases made available by those countries when threatened, if threatened.

More generally, the principal problem is that if you place that carrier-based air power with which you were associated with in such a distinguished way for so long in the context of the great European war which, however improbable, is the basis of our defense planning and budgeting, it turns out that our carrier aviation is almost insignificant.

What those 34, 36 strike aircraft on board each carrier can do would hardly be noticed by an advancing Soviet army in the context of the air power already present in Europe. It may be of a very high quality, but it would be a very small quantity.

More generally, since you yourself are, must be, a genuine expert in naval power, not an observer and a commentator as I am, I would ask you the question: Do you think that carrier-based air power, that particular form of maritime power, is destined to be forever the central form, that there will be no new form of maritime and oceanic and naval power emerging?

Senator McCain. No.

Dr. Luttwak. There never will be? It will always be carrier-based aviation? It will not be through a more varied use of the submarine mode, and by utilizing the fact that aircraft can now span the oceans? It will not be that? It will always be carrier-based air power forever?

Senator McCain. I do not believe that it will be forever, no.

Dr. Luttwak. I see. Well, I believe that we can already envisage the emerging form, as indeed was true when the Navy insisted that 15 battleships were an absolute national requirement rather than 15 carriers. And please remember that the error did not come at the expense of the U.S. Army. It came at the expense of carrier aviation, prior to Pearl Harbor.

Mr. West. The last point seemed to be leading us toward Star Wars and battleships in space. Maybe in the year 2020, 2030, those things may come, but I cannot conceive of going through the year 2000 where we would not need a significant number of mobile platforms.

I do not care whether the air comes from the land or the sea. That is a separate issue, I think, Edward, in terms of the strike capabilities.

In terms of that large war and the contribution of the carriers, I have participated in enough war games now to have been disabused of the notion that it is insignificant. It is not insignificant. It is not as critical to the central battle, obviously, as the forces fighting the central battle.

But there are so many different theaters involved at one time that one cannot say that it is insignificant.

Senator Kennedy. I want to thank all of you very much for your presence here today. I think you have seen from the wide attendance of the membership, of the full membership of the committee, the great interest in this issue. And we certainly touched a wide range of different issues related to this subject matter.

You have obviously stimulated a great deal of more thought for the members of this committee. I want to thank you all very much.

Senator Warner. Mr. Chairman, may I join you in that? This is one of the critical issues in this particular defense budget, and I congratulate Chairman Nunn and yourself for bringing together some of the finest minds, even though I very strongly dispute their premise.

Senator Kennedy. Thank you very much, gentlemen.

[Whereupon, at 4:42 p.m., the subcommittee was adjourned.]

PANEL NO. 2

The subcommittees met in open session, pursuant to notice, at 4:43 p.m., Senator Edward M. Kennedy (chairman) Subcommittee on Projection Forces and Regional Defense, presiding.

Present: Senators Kennedy, Nunn, Levin (chairman, Subcommittee on Conventional Forces and Alliance Defense), Shelby, Warner, and McCain.

Staff present: Carl M. Smith, staff director for the minority, Romie L. Brownlee, deputy minority staff director; John J. Hamre, George K. Johnson, Jr., Ronald P. Kelly, James R. Locher III, Norman G. Mosher, Gordon G. Riggle, Mark B. Robinson, and Daniel J. Wildfong, professional staff members; Russell C. Miller, research assistant; Lori M. Jackson and Debra A. Rice, staff assistants.

Also present: Francis J. Sullivan, assistant to Senator Stennis; Jeffrey B. Subko, assistant to Senator Exon; Greg Weaver, assistant to Senator Levin; Gregory B. Craig, assistant to Senator Kennedy; Charles C. Smith, assistant to Senator Dixon; Milton D. Beach and Donald A. Mitchell, assistants to Senator Glenn; Leon Fuerth, assistant to Senator Gore; Jeff Hyche, assistant to Senator Shelby; William J. Wight, assistant to Senator Warner; Dale F. Gerry, assistant to Senator Cohen; Henry D. Sokolski, assistant to Senator Quayle; Jay L. Kriss, assistant to Senator Wilson; Alan Ptak, assistant to Senator Gramm; and Lorne Craner, assistant to Senator McCain.

OPENING STATEMENT OF SENATOR EDWARD M. KENNEDY, CHAIRMAN

Senator Kennedy. Now we will proceed to hear testimony from our second panel: the Honorable John Lehman, Secretary of the Navy; Vice Adm. Henry C. Mustin, Deputy Chief of Naval Operations for Plans, Policy and Operations.

Mr. Secretary, I understand that you will make some introductory comments and then Admiral Mustin will make a presentation, and then you will have some concluding remarks.

I might mention, that Vice Admiral Mustin is a graduate of the U.S. Naval Academy, a 33-year veteran of the Navy, served as commander of the Second Fleet Strike Force Atlantic, Deputy Commander of the Navy Surface Force, the Atlantic Fleet, and Navy Inspector General.

And Secretary Lehman, we all know about you.

Senator Levin. We invited you anyway.

Senator Kennedy. We want to extend again our apologies for scheduling questions that we had. You have been very accommodating.

We look forward very much to your presentation. We know you had a good presentation in the House of Representatives yesterday, and so we know you have been extremely busy on these issues as well as others. We welcome you here to the committee.

Senator WARNER. Mr. Chairman, I join in welcoming the distinguished Secretary and the Admiral. This may be one of your last appearances before the Congress, Mr. Secretary. We will miss you. I am not sure you will miss us.

Before however, this issue is decided—and I am optimistic that it will be favorable, if not this year then next—you laid the foundation by which this Nation will get that 600 ship Navy, and the 15 carrier battle elements is the framework of that 600 ship Navy.

You will be long remembered with great respect on this institution. We welcome you today.

Senator KENNEDY. I have a statement from Senator Dixon that I would like submitted for the record at this time.

[The prepared statement of Senator Dixon follows:]

PREPARED STATEMENT BY SENATOR ALAN J. DIXON

Mr. Chairman, this afternoon the joint Subcommittees on Projection Forces and Conventional Forces meet to receive testimony on the Navy aircraft carrier replacement program. As chairman of the Subcommittee on Readiness Sustainability and Support, I am deeply concerned whether United States Armed Forces can continue to operate and maintain those weapons systems and facilities vital to our national defense. There is no doubt that all our subcommittees will face hard choices as we analyze the Department of Defense authorization request for 1988 and 1989, especially within the context of static defense budgets.

Mr. Chairman, the administration has submitted a budget that makes me wonder if the United States will be able to sustain its conventional war fighting capabilities in the face of continued thinning and stretching of major conventional weapon programs. Many of the planned purchases in the fiscal years 1988/1989 budget are significantly lower today than when first projected in the budget we passed for last year.

For example: in the fiscal year 1987 budget, the Department of Defense projected purchasing 840 M-1 tanks for 1988. The budget now before us project purchasing only 600 M-1 tanks. Such a purchase will increase the price per tank from $100,000 to $300,000.

The F-18 fighter, F-16 fighter program, and other major weapons programs, will be significantly stretched out in this budget. Mr. Chairman, we will need to avoid this feast and famine in funding proven production lines, if they are to continue to produce efficiently.

In addition, the budget request for Navy aircraft spare parts has been cut $120 million below the 1987 level and a full $235 million below the level projected for this year in the fiscal year 1987 budget. I question whether the Navy's spare parts program is just one of the many being sacrificed to purchase these 2 new nuclear aircraft carriers.

Mr. Chairman, I support a defense budget which will allow us to have a modern, well-trained, highly-motivated Armed Forces that will be sustained by a proper and consistent infrastructure. We must review and eliminate all marginal programs in every branch of the service and appropriately restructure the priorities of the administration. We do not need quick fixes, as seen in these stretchouts, and more slashes of unglamorous accounts such as ammunition and spare parts, but rather a careful matching of our military forces with achievable and realistic defense budget.

Thank you, Mr. Chairman

Senator KENNEDY. Secretary Lehman, you may proceed.

STATEMENT OF HON. JOHN LEHMAN, SECRETARY OF THE NAVY

Secretary LEHMAN. Thank you very much, Mr. Chairman. And I am very pleased to be before the committee and the subcommittee once again, and I regret that this, my seventh year of presentations, will be my last as Secretary of the Navy. But I am sure that we will have opportunities to exchange views in the years ahead.

I would like to first submit an overview of the strategy and the relationship of maritime strategy to national strategy, and how the 600 ship Navy and the carriers fit into that. Rather than belaboring it here this afternoon, I would like to submit that for the record.

Let me go right away to a very short address on the requirement for the size of the Navy. That really derives from the national strategy, and the national strategy is based on a common sense assessment of where our vital interests are engaged around the globe.

Much has changed in the last 10 years in the nature of our global interdependence and, while the importance of NATO has not diminished at all, there has been a significant increase in our interdependence, economic and military, with other areas of the world, and more specifically in the Pacific.

Our energy independence, as you know, has shifted dramatically in the last 10 years, to the point where we get five times as much oil from Alaska as we get from the Persian Gulf. Indeed, we get a third nearly of our imports from Mexico alone. So the Caribbean and Central America and the Pacific Basin is much different today than it was just 10 years ago.

Our trade balance has increased dramatically in the Pacific in the last 10 years. When I first came to office our trade balance between our Atlantic trading partners and Pacific trading partners was about equal. Today we have a balance of about $40 billion more in the Pacific, and the imbalance is growing daily.

So it was quite practical to talk about and indeed to agree on a swing strategy as a way to meet our national security commitments ten years ago. And indeed, through successive administrations that was the underlying strategy through variants of our national strategy.

The debate over the Panama Canal was how fast we could swing the Seventh Fleet to reinforce NATO. We could talk about that practically because there was not a significant threat to our vital interests, a life-threatening threat, in those days.

Today there is. Today there is a Soviet fleet of 500 ships permanently based in the Pacific and a vital interest level far greater than it was just 10 years ago; 130 submarines permanently in the Soviet fleet in the Pacific that were not there before.

There are nuclear strike cruisers and through-deck cruisers, VSTOL carriers. There is a very offensive oriented dimension now, added to the traditional defensive dimension of Soviet naval forces in the Pacific.

In just the last year, we have seen almost 10 major deployments and exercises of Soviet submarine interdiction forces in the eastern Pacific. This is a new dimension to Soviet naval activity. It is the corollary to our growing dependence on the sea lanes in the Pacific.

So a fleet that could deal in a largely sequential fashion with a threat to our vital interests in NATO is no longer large enough because we could not abandon the Pacific. Abandoning the Pacific by swinging the fleet out of the Pacific would be to turn it over to the offensive capability now in the Soviet fleet and to abandon our allied commitments, our treaty commitments, and indeed the interdependence of our economy itself.

That is why we need a larger fleet today than we needed 10 years ago. That is why the 600 ship Navy is a major building block of the President's national security policy.

Now we argue about the mix as a part of that. The overall size of the fleet, as long as we continue to have the commitments and vital interests that we do in five major geographic areas of the world, should not really be intellectually subject to a great deal of debate.

What kind of ships—and that is the subject of this hearing—certainly may be. Fifteen carriers form a major element of our approach to dealing with the tasks that are given to us.

And after all, we do not ask to go to the Indian Ocean, Persian Gulf, Mediterranean, Western Pacific. Those are tasks that are given to the Navy; we do not ask to go there. Given the tasking to go there, we derive requirements from the CINC's, and from the war gaming, and from the exercising that it takes to survive and to do the job in that area.

We see no way that that can be done without sea-based air power in each of those maritime areas with a certain amount of simultaneity. We can never have a fleet large enough to avoid some sequential operations in our strategy. Since 1925 and Billy Mitchell, it has been unarguable that ships at sea without air cover are very vulnerable to rather simple interdiction and the minimum number of 15 carriers comes from the premise.

The British learned this the hard way in the Falklands. They went down there to do a naval task. Their destroyers, their cruisers, their troop carriers, their tankers, their container ships did not go down there to protect an aircraft carrier. They went down there because they had naval missions laid upon them.

They had to go without a carrier, without the *Ark Royal.* They had two through-deck cruisers with VSTOL aircraft, but they had no large deck carrier with the full air wing necessary to establish air superiority. As a result, sixteen ships were hit, six of them sunk essentially using World War II tactics. Only three were sunk by the Exocet missile, and they were all small ships.

The carriers provide the superiority that is necessary. They are the escorts to every other naval task we have. We do not buy the fleet, as some critics suggest, to protect the carriers. It is the logic of the Mad Hatter to suggest that every carrier costs you $30 billion because you have to buy destroyers and a full battle group to protect it.

You buy the carrier to protect everything else. To suggest, as some of your witnesses did today, that the carrier has to spend all of its power defending itself is to suggest the nonsensical proposition that, if only the carriers would go away, the Soviet Backfire bombers, with their anti-ship cruise missiles, would not dare attack the SL-7's full of Army divisions and the Texaco tankers and the other naval power of maritime lift, of anti-submarine warfare, of troop carrying, and of all of the requirements that the maritime power requires.

Obviously, that is nonsensical. You better bring air superiority with you when you go into harm's way, and harm's way, if it is in the Falkland Islands, is everywhere in the globe today.

That is why we buy carriers, and they are the last major combatant that we would give up if we had to reduce our force structure. We would reduce other ships before we give up that license on life to everything that travels on the surface of the sea.

SUBMARINES

Now, some armchair strategists suggest some day in the future we are going to reach a great new day when everything can be submarines. And we in the Navy would be very happy to go only to submarines, because they are the most survivable. But we see no practical way to convince Mobile and Exxon and Texaco to invest in mobile submarine tankers. We see no practical way to get commercial commerce to travel in submarines.

Because of the cost effectiveness, only surface ships can move the tonnage to keep the commerce of this Nation and the free world alive. It would be impossible to carry out the NATO reinforcement plan without 95 percent of the tonnage traveling on the surface of the sea.

If it is going to be on the surface of the sea, we the Navy, who are charged by the national strategy to protect it, must be there on the surface to prevent the Backfires and the cruise missiles and the submarines from attacking it. It is the carrier that brings that dimension of protection to it. To me, that is not really at issue intellectually.

I believe, unlike some, that we will see carriers 200, 300, 400 years from now, and they will not be a great deal different than the ones you see today. Inside they will probably be very different. But essentially, a carrier is two dimensions on the surface of the earth that moves around.

AIR FORCE BASES

I do not foresee a day when we will not have Air Force bases. Indeed, we have had army divisions at least since Julius Caesar's time, and we will have them, I would suggest, long, long into the centuries in the future, just as we will have aircraft carriers, because just as a runway is not a particularly exciting piece of military technology that grows obsolescent with years and goes through some kind of a sine curve of predictable obsolescence, so too an aircraft carrier, being just a piece of moveable geography on the face of the earth, is not going to grow obsolescent.

Certainly the technology aboard it, in it, propelling it, will evolve in the years ahead, but not the two dimensions of length and width, to put aircraft to operate in the sea or in the air superjacent to the sea. So that is what we are talking about.

To me, the more interesting issue is, "Is this the best way to buy it?", the way we are proposing? That should really be the issue. Frankly, we have evolved our thinking over the last year, based on a number of changes since the last time I testified before you a year ago.

We had estimated that we would be able to get considerably better performance out of the modifications that we were trying out on the *Midway* and had planned on putting side blisters on the Forrestal class than we now see is really practical to get.

And so, in addition to that, we now have a great deal more hard experience in building the two ships that you authorized five years ago in the two ship carrier buy when you authorized the first long lead for those two ships. You recall, I testified before all of you five years ago and promised you $750 million savings if you would agree to go with us on the two ship buy, that is, two at a time, which everybody thought was rather audacious.

But we got the authorization. Last year, you will recall, you asked the GAO to audit the actual savings, and they confirmed, not $750 million, but $1.2 billion as of last summer.

I am pleased to be here this afternoon to tell you that on the basis of the latest Comptroller audit, we will be sending you figures, which we will have the GAO audit for you, to suggest that right now we have saved by executed contracts for Government-furnished equipment and the completion to date at Newport News $2 billion of actual real savings under the original promise—not $750 million, but $2 billion.

And we expect the figure to go higher than that by the time we actually get the second of the two carriers delivered to the Navy in 1991. So that is what we base our estimate of $3 billion savings, because we see two sources of the savings from this carrier buy.

One is the heel-to-toe benefits of not losing your trained supervisors, your yeomen and journeymen trades and crafts, and keeping continuity in your work force, which is important not for the continuity in learning curve itself, but because quality people can go wherever they want in these kinds of building trades, the construction trades, and they will not stay where there is any uncertainty for ups and downs, layoffs and non-layoffs.

That is a truism, and anyone who has had experience in the construction business or anything related to it knows that that is the essential part of keeping competitive in the business.

The second benefit to heel-to-toe is buying twosies instead of onesies. If you order now and get options that enable builders of specialty kinds of pumps and all of the hardware and infrastructure that goes into a carrier, then you get into much better pricing.

If you buy the specialty steels in advance and buy twice the quantity instead of half the quantity, since nobody else buys steels like HY80 and HY100, nobody else buys steels but us, there is a big payoff by buying twice as much instead of half as much.

So those are the two sources of the savings of buying the two carriers this way. I am not asking you to trust us on this one. We are looking at the best independent cost estimating of the future, although we have used the approved Defense Department approach to independent cost estimating.

What I am asking you to do is look at what we have done with the *Abraham Lincoln* and the *George Washington,* look at the results. That is what we are basing the projection on how to buy these two carriers this way.

And one final point I would like to make before turning it over to Admiral Mustin is that if we have to reduce in the years ahead, if we are not going to get enough money as we now believe is necessary—and who of us has the crystal ball to predict what Congress is going to do in the out years?—if we do not, I would submit that common sense and cost effective analysis tells you we still ought to keep buying one carrier every third year on the average and mothball them at 30 years, instead of keeping them to 45. Retire the older, more expensive to maintain ships, to reduce your force that way.

Certainly that will be my recommendation, because to do otherwise will lose forever a certain element of our industrial base and the competitiveness of the industrial base that remains, and I think that would be a very poor tradeoff. So I do not think that the two carrier buy in this year's budget is sensitive to whatever level you decide to vote for defense and for the Navy.

So that is my short pitch, and now I would like to ask Admiral Mustin, fresh from the Atlantic NATO Strike Fleet Command, to speak briefly for the CNO.

[The prepared statement of Secretary Lehman follows:]

PREPARED STATEMENT BY HON. JOHN F. LEHMAN, JR., SECRETARY OF THE NAVY

Mr. Chairman:

I am pleased to have the opportunity to testify on the President's budget request for two long-lead funding replacement aircraft carriers. A balanced force of 15 deployable aircraft carriers has long been the core element of this administration's commitment to the 600-Ship Navy which, thanks to strong Congressional support, is under construction and fully funded.

In your letter of request to appear before the subcommittees, you asked that we discuss the rationale for requesting funds to procure the long lead equipment necessary to commence the process of building two replacement CVNs. I will, therefore, review the strategic and maritime imperatives and budgetary considerations which shaped this decision. This discussion will show, by providing long lead funding now, that we are taking steps to maintain the nation's minimum requirement for an effective conventional naval force structure, that we are proposing an effective long range plan designed to optimize total return for the defense dollar, and that we are pursuing a sound business strategy.

WHY DO WE NEED 15 CARRIERS?
STRATEGIC IMPERATIVES

As a maritime nation, the United States and its Navy have inescapable global commitments. Our dependency on the free use of the seas is both permanent and inherent. It is the seas, and unimpeded access to their use which provide us our energy, our commerce, and our resources. It is the freedom of the seas and our superior maritime forces that provide a credible commitment to the more than 40 nations we are in alliance with globally.

The Soviets recognize our dependency on free use of the seas. They have designed, built, and trained a Navy to challenge our interests worldwide. No longer a coastal defensive force, the Soviet Navy is a global blue-water offensive maritime force that in addition to defending its own interests, is designed and equipped to interdict our vital lifelines and access to the world market, to interdict our sealines of communications, and to sever the supporting link between the United States and its allies in time of conflict.

Our position as the leader of a global alliance of free nations in opposition to the Soviet Union, to its Warsaw Pact partners, and to its overseas proxies, renders Lord Nelson's and Alfred Mahan's mandate that a maritime nation must have "command of the seas", more imperative than ever before. Command of the seas means that we must have maritime superiority.

Maritime superiority means that the United States must be capable -- and be seen to be capable -- of keeping our sea lines of commerce and communications secure in those areas of the world where our vital interests depend on them. If we are to survive as a free nation, then our access to our allies, our energy sources, and our trading partners cannot be hostage to the offensive power of any combination of adversaries. Together with our allies we must have the maritime power to militarily defeat any attempt to close off such access.

National Security Strategy

Self-styled military reformers often assert that the United States has no national strategy. They are wrong. A succinct statement of our national security strategy has been provided to Congress by the President. That strategy is set forth in the context of specific national interests and fundamental objectives designed to preserve this country's free democratic institutions, to protect the United States, including its foreign assets and allies through a solid foundation of military strength, to foster the country's economic well-being, and to bolster an international order supportive of the vital interests of this country and its allies. Maritime strategy plays a prominent role in our national security strategy. As an island nation and senior partner in a global alliance system, we must have strong naval forces to support the maritime strategy. As the President noted in his national security strategy statement:

> "Maritime forces play a unique role in supporting our military strategy. Given the realities of our geostrategic position, fronting on two oceans, maritime superiority is vital to support our alliance relationships and our forward deployed forces.
>
> Maritime superiority enables us to capitalize on Soviet geographic vulnerabilities and to pose a global threat to the Soviet's interests. It plays a key role in plans for the defense of NATO allies on the European flanks. It also permits the United States to tie down Soviet naval forces in defensive posture protecting Soviet ballistic missile submarines and the seaward approaches to the Soviet homeland, and thereby to minimize the wartime threat to the reinforcement and resupply of Europe by sea.
>
> Essential to our wartime strategy, maritime superiority plays equally vital roles in peacetime. Mobile maritime forces, easily deployed in time of crisis, are a traditional symbol of our nation's will and capability to defend its vital interest."

Our national security strategy literally cannot be executed without maritime superiority which is relevant throughout the entire spectrum of possible conflicts with the Soviet Union. Maritime superiority is epitomized by this Administration's long standing goal of a 600-ship Navy centered around 15 deployable carrier battle groups, four battleship battle groups, 100 attack submarines, adequate numbers of ballistic missile submarines, and sealift to support an assault echelon of a Marine Amphibious Force and a Marine Amphibious Brigade.

Deterrence

The fundamental objective of our national strategy is deterrence, to allow our national interests to be preserved in peace. Deterrence seeks to safeguard U.S. interests by convincing adversaries that we have the military capability to ensure that they will suffer more than they can possibly gain if they choose aggression against us, at any level, from individual acts of terrorism to all-out nuclear war.

As President Reagan has emphasized so often, "A nuclear war cannot be won and must never be fought." Among nuclear powers, any conflict carries the risk of irreversible escalation. Deterrence, therefore, must be a continuum. It does not break into the discrete packages that we tend to address in academic literature. Deterrence extends all the way from discouraging terrorist attacks on American citizens to the prevention of a strategic nuclear exchange. If our strategy is to be successful, we must have the ability to counter and meet threats of force at every point.

We seek to deter not only actual aggression, but also coercion of the United States and its allies through the threat of aggression. Coercion and intimidation, rather than military aggression has been the basis of Soviet policy toward Western Europe since 1945. Moscow wants to coerce the Europeans to distance themselves from the United States, neglect their military capabilities, adopt passive policies like nuclear-free zones and similar measures for unilateral disarmament, and ultimately end the 16-nation North Atlantic Alliance, which is the embodiment of our collective resolve to resist Soviet domination of Europe. As Churchill observed in 1946, "I do not believe that Soviet Russia desires war. What they desire are the fruits of war and the indefinite expansion of their power and doctrine."

More recently our interests have been assailed by a variety of terrorists, some state sponsored. The flexibility of our naval forces, sometimes acting jointly with other U.S. military elements and with the cooperation of our allies, has given us the means to resist such coercion. Operations such as the successful intercept of the Achille Lauro pirates, the subsequent naval operations off the Libyan coast and the perfectly executed joint U.S. Navy/U.S. Air Force strike against facilities that supported terrorism in Libya, show that we can deal effectively with terrorist acts of aggression and coercion.

Forward Defense

Our mission is to prepare our defenses so well that we successfully deter aggression. Should deterrence fail, however, our national strategy must be to protect U.S. interests and to deny the aggressor the fruits of his aggression. We would seek to end a war as quickly as possible with peace restored on terms favorable to ourselves and our allies. For the Navy and Marines, this means that early offensive action must be taken to destroy enemy maritime forces as far forward as possible, thereby precluding enemy interdiction of the vital sea lines of communication upon which depend all of our alliances. It means the ability to sustain such action at sea and in direct support of the land battle for an indefinite protracted war.

Alliance Solidarity

Our national strategy is a strategy of alliances and coalitions. It relies on our allies' major contributions to collective security and draws on agreed alliance defense commitments. Because of our alliances, we are able to achieve a level of deterrence and defense that would otherwise be unattainable. We and our allies seek to deter aggression by maintaining forces that are capable of responding effectively to the most serious Soviet threat to our collective interests. These forces should also be flexible enough to deal with other lesser threats to our collective and national interests. Should aggression occur in several regions simultaneously, U.S. military responses would be governed by existing commitments, broad strategic priorities, the specific circumstances at hand, and the availability of forces.

Maritime Strategy

Today's debates would benefit from a more precise understanding of the role of strategy. Strategy is not a formula for fighting each ship and deploying each tank in the battles that may take place around the world. That is not the function of the military establishment inside the Washington Beltway. Such is the proper function only of the theater commander who is given the responsibility to carry out the defense objectives set by the national command authorities.

Strategy means to address rigorous logic to the allocation of the scarce resources available to us in order to secure the objectives of our national security. Strategy is the logical set of allocations and priorities that guide how we spend our money and train our people, and it requires careful scrutinizing of the strategic realities with which the United States must contend.

The vital interests which make up the boundaries of our maritime tasks are relatively straightforward and not subject to serious debate. We do not determine what these vital interests are, they are provided by the network of more than 40 treaty commitments entered into by the United States Government, by the reality that we import more than we export, and by official statements of our policy such as the President's National Security Strategy Report. These commitments bind our fortunes to all of the world's great oceans -- the Caribbean, the North Atlantic, the Norwegian and Barents Sea, the Mediterranean, the South Atlantic, the Indian Ocean and Persian Gulf, the Southwest Pacific, the Northwest Pacific, Alaska and

Hawaii. Which of these vital areas would anyone seriously suggest we withdraw from? Yet, that would be the alternative we would face if the Administration had not committed us to the 600-Ship Navy force goal funded by the Congress which we will achieve in 1989.

Maritime Strategy and Naval Forces

Unlike land warfare, if deterrence breaks down and conflict begins between the navies of the United States and the Soviet Union, it is instantaneously a global naval conflict. Therefore we must maintain security of the sealanes world wide or write them off and suffer the consequences.

Today's maritime strategy, a strategy which is firmly set in the context of national strategy and which emphasizes coalition warfare and the criticality of allies, is the conceptual framework on which we base our naval planning. Stated in summary fashion, our strategic objectives are the following:

- To prevent the seas from becoming a hostile medium of attack against the United States and its allies.

- To ensure that we have unimpeded use of our ocean lifelines of our allies, our forward-deployed forces, our energy and mineral resources, and our trading partners.

- To be able to project force in support of national security objectives and to support combat ashore, should deterrence fail.

To achieve these objectives, we need a maritime strategy at once global, forward deployed, and--with our allies--superior to our probable opponents. Global, because our interests, allies, and opponents are global; forward deployed, because to protect those interests and allies, and to deter those opponents, we must be where they are; superior, because if deterrence fails to prevent a conventional war at sea, it is better to win than to lose.

As Secretary of Defense Weinberger has noted:

> "Our maritime strategy continues to emphasize forward presence to prevent non-hostile situations from becoming hostile. Should a crisis involve the actual use of force, our strategy calls for controlling the situation with forward deployed forces on the scene... In the tradition of Theodore Roosevelt, the greatest value of President Reagan's maritime strategy is that it focuses on the crucial issue of how we can best use our maritime forces, and those of our allies, to achieve the basic goal of deterrence -- and deny the adversary his preferred warfighting strategy."

Beyond the central concept of global, forward-deployed, and superior naval forces, strategy's role is to give coherence and direction to the process of allocating money among competing types of ships and aircraft and different accounts for spare parts, missile systems, defense planning, and the training of forces. It provides guidelines to aid us in allocating both resources and shortages.

Title 10 of the U.S. Code charges the Secretary of the Navy with ensuring the highest level of training appropriate to the responsibilities placed upon both the Marine Corps and the Navy. That is what strategy provides to us--a framework within which to train. One will search in vain, however, for a Navy cookbook that tells on-scene commanders when to move aircraft carriers, or how or where to move attack submarines or Aegis cruisers at any given point after a conflict commences. There should never be any such cookbook and certainly it should never come from Washington. Those who criticize our strategy for being the wrong cookbook or for not having a cookbook do not understand strategy.

Continental vs. Maritime Strategy

Not understanding the meaning of the word "strategy", some commentators have suggested that there is a choice between maritime strategy and something called "continental strategy". This is a meaningless hypothesis . The coalition of free nations bound together in NATO, for instance, must have maritime superiority as a prerequisite for any defense strategy. Maritime superiority alone may not assure victory, but the loss of it will certainly assure defeat--and sooner rather than later. The chronicles of warfare from the classical era forward testify consistently to the influence of sea power upon history. Their singular lesson is that great continental powers do not long prevail against an opponent with mastery of the seas. The Soviet Union seems to have understood the experience of history, which motivates in part their achievement of a blue-water navy. It is not accidental that the free world alliance is named for the great sea that connects its members while its totalitarian adversary takes its name from a land-locked city. Today, continental defense in NATO rests on early achievement of maritime superiority.

Some critics argue that our Navy should be less global, less forward-deployed, or less superior, with the resources saved to be poured into a stronger continental defense. To be less global means to abandon some area of our vital interests. To believe that in the case of the Northern Flank of NATO, for example, a "passive" defense line thrown across the Greenland-Iceland-United Kingdom Gap will somehow protect our sea lanes or defer an engagement with Soviet forces demonstrates a lack of understanding of the fundamental mechanics of war at sea and the workings of NATO and the Soviets' own operational requirements. No coalition of free nations can survive a strategy which begins by sacrificing its more exposed allies to a dubious military expediency. To suggest that naval support of Norway or Turkey or Japan is too dangerous because it must be done close to the Soviet Union is defeatist. To suggest that such a strategy is provocative to the Soviets just indicates the lengths to which some critics will go, in order to portray

Soviet intentions as solely defensive. We must never forget that the basic source of Soviet antagonism toward us stems from the fact that the United States is the only nation capable of effectively resisting an expansion of Soviet hegemony.

As for strengthening our continental defenses, we and our allies are also doing just that. The U.S. alone has expanded its Army from 21 to 28 divisions since the mid-seventies, adding two reserve and five active divisions including support for more than 9200 Army aircraft. To discard maritime superiority in an attempt to match the larger Soviet ground forces, however, would give us neither conventional deterrence on land nor secure access by sea unless the Western democracies are prepared to militarize their societies to an unprecedented, and unwise degree.

Maritime superiority is not an alternative to, but a prerequisite for, any successful pursuit of defense and deterrence in the continent of Europe and the NATO area as well as the United States itself. Conversely, no maritime strategy can be a successful strategy without an effective land deterrent on the continent of Europe. The only real choice is between maintaining a maritime strategy in the defense of the Atlantic Alliance or failing to do so -- a failure which would prove fatal to NATO's overall defense policy.

Crisis Response

Crisis response has long been the business of the Navy and Marine Corps. Since 1946, naval forces have constituted the force of choice of our national response in over 80% of the crises confronting our national leadership. The reasons for this are straight forward:

- Naval forces operate in a forward-deployed posture and can use the continuum of international waters to provide significant deterrent value, and to protect United States' interests at crisis locations.

- Naval forces maintain consistently high states of readiness because of forward deployments.

- Naval forces bring an impressive range of formidable military capabilities which are applicable at each point of the spectrum of conflict. The most important instrument here is our carrier battle group with the embarked carrier air wing enabling integrated operations against submarines, surface ships, enemy aircraft, and enemy forces ashore, including thousands of miles inland if necessary.

- Naval forces can be sustained for lengthy operations independently of foreign basing or overflight rights. The size of the force can be varied in response to the threat.

- Naval forces are effective in combined operations with our sister services and with the armed forces of our allies.

In sum, naval forces provide an unparalleled flexibility and precision for addressing the unique features of virtually any crisis which might confront the United States. We must never forget that deterrence must be a continuum. It does not break into the discrete packages that we tend to address in academic literature. Deterrence extends all the way from discouraging terrorist attacks on American citizens to the prevention of a strategic nuclear exchange. If our strategy is to be successful, we must have the ability to counter and meet threats of force at every point.

Sizing our Naval Forces: The 600-Ship Navy

National security strategy provides the mission for our naval forces and the maritime strategy provides the conceptual framework for employing all forces to achieve the national objectives. From that strategy logic dictates the size of the fleet, the kinds of ships and weapons used, and the type and intensity of training and readiness.

Why 600 Ships? What Determines the Size of the Navy?

Since World War II, maritime force planners have found themselves at the mercy of three enduring elements:

Geography. Water covers three quarters of the world; and the United States is an "island continent" washed by the Atlantic and Pacific oceans.

Vital Interests of the United States. These are expressed in the web of more than 40 treaty relationships that bind us to mutual defense-coalitions around the world. These relationships shape our national security requirements--together with the energy and commercial dependencies that support our economy in peace and in war.

The Soviet Naval Threat. Whatever the internal rationale for the massive expansion in the capabilities and sphere of operations of the post-World War II Soviet Fleet, the USSR has created an offense-capable, blue-water force, providing a major element in the Soviet Union's global military reach that supports the expansion of Soviet influence from Nicaragua to the South Pacific, and from Vietnam to Africa. Daily, no matter where our fleet operates, our ships and men may pass within yards of Soviet naval forces. Familiarity is breeding a well-deserved respect on both sides: we see that the Soviets are good and are getting better--and they recognize that we are doing likewise.

Soviet surface forces have long been making deployments to the vulnerable chokepoints of the Caribbean Sea and Gulf of Mexico. Worldwide, we find the Soviet Navy able to maintain itself astride the vital sealanes and navigational chokepoints through which most of the Free World's international trade must pass. These Soviet naval deployments constitute a fundamental change in the global military balance of power that has been surpassed in significance only by the advent of thermonuclear weapons. The rise of the Soviet Merchant Marine has been an integral component of the overall, unified Soviet concept of sea power and has taken on an even greater significance in recent years in view of the precipitous decline in Free World merchant shipping and shipbuilding. No planner - civilian or military - can ignore the dimensions of Soviet maritime power.

The past year has continued the Soviet Navy's new emphasis on quality in ship construction and weapons systems and marked the entry into service of the first of the new, quiet AKULA-class nuclear-powered attack submarines and the first launching of the SS-NX-21 strategic cruise missile from an operational submarine. New ship and submarine construction continues apace, with a return to the higher levels of submarine launchings common to the 1970s: nine submarines entered the water, five of them nuclear-powered, and one of those is intended for launching strategic ballistic missiles. The fourth KIEV-class carrier has left its building yard, and fitting out work continues on the first ship of the new giant carrier class that we expect to form the nucleus of Soviet task groups in the 1990s. To complement these 65,000-ton carriers, work continues on the third and fourth KIROV-class nuclear-powered guided missile cruisers. Construction of SLAVA-class cruisers has resumed, and destroyer building continues at a steady rate. Soviet yards in the past year delivered a staggering 73 combatants, of which only 31 were for export.

The capabilities of the Soviet task groups of a decade from now, when combined with continuing advances in the Soviet Navy's use of space for surveillance, communications, and navigation will be an order-of-magnitude superior to the forces we now face. The maturing of Soviet naval air power will be matched by an overall increase in fleet offensive and defensive capabilities as the sophisticated ships of the 1980s replace the mass production units of the 1950s and 60s. The Soviet fleet of the 1990s may be a bit smaller than at present, but its submarines will be faster and quieter and will have better sensors and self-protection; its surface ships will have greater endurance, new generations of sensors and weapons and greater survivability; and new aircraft will have greater endurance and payloads. More significantly, the command, control and communications network that binds together these forces will be far more responsive and redundant.

Two changes in Soviet naval activity during 1986 suggest that the U.S.S.R. has been paying attention to the development of the maritime strategy and to the renaissance of our fleet under the Reagan Administration: while the deployment level of Soviet strategic "out-of-area" activity for other Soviet submarines and their surface forces has dropped markedly, major fleet exercises in 1986 departed from previous trends and were staged much closer to home, under the umbrella of land-based aviation. Overall, the Soviet Navy has continued to operate and to train--but activities have switched dramatically to their home waters. The net strategic result appears to us to be a Soviet fleet positioning and training to counter the maritime strategy.

Wartime Requirements or Peacetime Deployments

Geography, alliances, and the Soviet threat combine to dictate the actual numbers of ships--the "size of the Navy"--required to fulfill our commitments in each of our maritime theaters. Before reviewing in detail the forces we need in each theater, some observations are in order:

Any view of the global disposition of the U.S. Navy and Marine Corps reveals that we deploy in peacetime very much in the same manner as we would operate in wartime. For purposes of deterrence, crisis management, and diplomacy, we must be present in the areas where we would have to fight if war broke out. Of course, the operational tempo is different--a roughly three-to-one ratio in wartime, as compared with peacetime.

We also train as we intend to fight. A full-scale general war at sea would rarely find a carrier battle group operating alone. So we train often in multiple carrier battle forces.

Allied Navies. To deal with the primary Soviet threat, as we do in all our planning, we start with a base of allied forces in the areas under consideration. The navies of our allies are good. In areas such as diesel submarines, frigates, coastal patrol craft, minesweepers, and maritime patrol aircraft, our allies have assets absolutely essential to us for sea control in war and peace. In some regions, such as the Eastern Atlantic and the waters surrounding the United Kingdom, our allies supply a majority of the antisubmarine capability to counter the Soviet threat. In fact, if we could not count on our allies, we would require a U.S. fleet much larger than 600 ships to deal with the 1,700 ships and submarines that the Soviets can deploy against us. All but one of the world's greatest navies are on our side, and this gives a tremendous advantage to the U.S. Navy and a significant cost savings to the U.S. taxpayer.

Shifting Trade Dependency. America's increasing commercial and energy interdependence with Asia, and the growth of the Soviet Pacific Fleet--now the largest of the four Soviet fleets--have negated the so-called "swing strategy" of the Fifties, Sixties, and Seventies, which planned to reinforce the Atlantic Fleet with combatants from the Pacific in time of crisis. Today, the United States has Asian interests at least equal to its historic engagement in Europe. Existing treaty relationships in the Pacific have been augmented by growing commercial connections. For example, in 1980, the value of U.S. trade with the Pacific rim nations was roughly equal to trade with the country's Atlantic partners. Five years later, Pacific trade exceeded that with Western Europe by $47 billion.

Shifting Oil Dependency. Our oil dependencies have shifted tremendously in the last five years, exploding the old myth of utter dependence on the Middle East. The reorientation of U.S. sources for crude oil --on a hemispheric axis-- is a long-term geopolitical reality that has gone largely unnoticed. However, it has forced America to reconsider the priorities of naval deployments in the Northern Pacific and Caribbean regions. In 1985 alone, the United States imported nearly eight times as much oil from the Western Hemisphere as it received from the entire Middle East. During the first nine months of 1986, Alaska alone produced an average of 1,800,000 barrels of crude oil daily, nearly three times the amount we imported daily from the Middle East and Persian Gulf. The locus of our oil trade is now clearly in the Western Hemisphere: Alaska, Canada, Mexico, Venezuela, and the Caribbean area.

With these observations as background, let us review our forces in the main geographic areas: the Atlantic, the Mediterranean, the Pacific, and Indian Ocean-Persian Gulf.

The Atlantic

The large Atlantic theater encompasses the North Atlantic, the Norwegian Sea, the Northern Flank of NATO including the Baltic throat, the South Atlantic, the Caribbean, and the Gulf of Mexico. It includes the coasts of South America and the west coast of Africa, all vital sealanes of communications. And it involves the Mediterranean and the Middle East. The U.S. Navy operates in the Atlantic theater with two fleets, the Sixth and the Second.

The Sixth Fleet in the Mediterranean is the principal fighting force of the NATO Southern Europe Command and provides strike, amphibious, anti-air superiority, antisubmarine, and close air support for the entire Southern Flank of NATO--a principal makeweight in the balance in the Central Front.

In addition, the Sixth Fleet is the principal naval force that supports our friends and allies in the Middle East. The threat there is significant. The Soviets maintain a fleet in the Black Sea and a deployed squadron in the Mediterranean. In wartime, we expect to see there also Soviet naval strike aircraft, a formidable number of diesel and nuclear submarines, and a full range of missile cruisers, destroyers, and other smaller combatants.

In wartime, U.S. forces in the Sixth Fleet would have to include three or four carrier battle groups, operating to meet NATO commitments. We would also need to deploy a battleship battle group and two underway replenishment groups. In peacetime, we average over the year about one and one-third carrier battle groups deployed in the Mediterranean.

The Second Fleet is the heart of the Atlantic strike force for NATO. It is responsible for naval operations in the North Atlantic, the Eastern Atlantic, Iceland, the Norwegian Sea, the defense of

Norway, and the entire Northern Flank including the North Sea and Baltic throat. It must simultaneously accomplish any naval mission required in the Caribbean, where we now face a very large Soviet and Cuban naval interdiction capability; in the South Atlantic, where we have vital sealanes; and along the West African sealanes, where the Soviets now deploy naval forces continuously.

For the Second Fleet, in wartime, we must plan to have four or five carrier battle groups, one battleship battle group, and three underway replenishment groups. Four carriers bring the equivalent firepower of 40 World War II carriers and can deliver accurate strike ordnance on target equal to 800 B-17s every day. Most of our Atlantic fleet training occurs in the Second Fleet's operating areas. Today, we have six carrier battle groups cycling in the Second Fleet.

The Pacific

Our increasing commercial interests and security ties in the Pacific have significantly changed our naval planning. If we are to protect our vital interests, we must have forces available to deploy to the Atlantic and Pacific theaters simultaneously. We cannot abandon one theater in order to deal with the other. A great paradox of the 1970s was the reduction of the fleet's size so that it could only be employed in a "swing strategy" --just as that strategy was being rendered obsolete by trade, geopolitics, and the growth of the Soviet Navy.

The Seventh Fleet is our forward Western Pacific fleet, which meets our commitments to Japan, Korea, the Philippines, Australia, and Thailand, and in the critical straits of Southeast Asia, as well as the Indian Ocean. In wartime, we would need to deploy five carrier battle groups to the Seventh Fleet, two battleship battle groups, and four underway replenishment groups. In peacetime, we average over the year the equivalent of one and one-third carrier battle groups in the Western Pacific.

We do not have a separate fleet in the critical area of Southwest Asia, the Indian Ocean and the Persian Gulf, although some have proposed the re-creation of the Fifth Fleet for that purpose. In peacetime, we have the Middle East Force of the Central Command and elements of the Sixth or Seventh Fleet, normally a carrier battle group.

In wartime, we plan for two of the Seventh Fleet carrier battle groups to meet our commitments in the Indian Ocean, Southwest Asia, East Africa, the Persian Gulf area, and Southeast Asia. Notionally, a Seventh Fleet battleship battle group and one underway replenishment group would also be assigned to operate in these areas.

The Third Fleet has responsibility for operations off Alaska, the Bering Sea, the Aleutians, the Eastern Pacific, and the

Mid-Pacific region. In wartime, there would be considerable overlapping and trading back and forth between the Seventh and Third Fleets. This happened in the Pacific during World War II. To cover that vast area, we must assign two carrier battle groups and one underway replenishment group.

Strategic Submarine Force. Our national strategic deterrent posture depends heavily upon the credibility and effectiveness of our strategic submarine force and, therefore, its force level ultimately must be determined at a national level. The President has directed that we procure one TRIDENT submarine per year until an ultimate force level is established. This level would be based on the military need to replace the POSEIDON fleet and to take advantage of the enhanced firepower and accuracy of TRIDENT in sizing the national strategic force. The outcome of current arms negotiations may also influence the force level requirement. At a minimum, our analyses indicate that at least 20 TRIDENT submarines are needed to replace the aging POSEIDON fleet.

OPTEMPO in Peace and War. These requirements compel us to deploy a 600-ship Navy. In peacetime, we deploy to the same places we must control in war, but at one-third the tempo of operations. This allows a bearable peacetime burden of six-month deployment lengths, and 50 percent time in homeport. Looked at either way, we require the same size fleet to meet peacetime deployments as we do to fight a global war. Taken together, they add up to the following:

TABLE 1
CURRENT NAVY FORCE REQUIREMENTS

	PEACETIME MARITIME STRATEGY	WARTIME MARITIME STRATEGY
	SIXTH FLEET	
CVBG	1.3	4
BBBG	.3	1
URG	1	2
	SECOND FLEET*	
CVBG	6.7	4
BBBG	1.7	1
URG	4	3
	SEVENTH FLEET**	
CVBG	2	5
BBBG	.5	2
URG	1	4
	THIRD FLEET*	
CVBG	5	2
BBBG	1.5	-
URG	4	1

-Fifteen carrier battle groups

-Four battleship battle groups

-One-hundred attack submarines

-Lift for the assault echelons of a Marine Amphibious Force and a Marine Amphibious Brigade

-An adequate number of ballistic missile submarines

*Includes forces in overhaul

**Includes Indian Ocean forces

Note: CVBG = carrier battle group; BBBG = battleship battle group; URG = underway replenishment group.

When escort, mine warfare, auxiliary, and replenishment units are considered, about 600 ships emerge from this accounting--a force that can be described as prudent, reflecting geographic realities, alliance commitments and dependencies, and the Soviet fleet that threatens them. Unless Congress reduces our commitments or the Soviet threat weakens, there is no way to reduce the required size of the U.S. fleet and still carry out the missions assigned to the Navy by the national strategy.

There must be no doubt in the minds of Soviet leaders that the United States and its allies can and will settle accounts on both land and sea, if challenged. The 600-ship Navy is an essential element in this credibility. We can and must afford the naval power that will sustain the defense of this country's allies and interests around the world.

Even without the need to plan for an undesired confrontation between the United States and the Soviet Union, the need for a 600-ship fleet is shaped by the volatile state of world affairs, and the requirement to maintain forward-deployed naval forces on a global basis to help secure our national interests. From the Northern Pacific where we have strong ties to Japan and South Korea and a growing relationship with China; to southwest Asia which remains most important to our supply of oil and is beset by the Iran/Iraq war and the Soviet incursion into Afghanistan; to Southern Africa, which sees a growing threat posed to regional security by unrest stemming from a variety of factors; to Western Europe which is linked to the United States by historic, cultural, and economic ties; and to the Western Hemisphere, which includes our homewaters, and is beset in various areas by social and political turmoil fomented by the Soviets or their proxies, any reasonable, global appraisal of our national interests will validate the requirement to maintain a ready, capable, and effective Navy centered on 15 deployable aircraft carriers.

15 Deployable Aircraft Carriers - Vital Core of the 600-Ship Navy.

Our naval force structure is based on the President's National Security Strategy and our global commitments to our allies which, combined, require a minimum of 15 deployable carrier battle groups.. Modern naval forces must include integrated air power to establish maritime superiority and to project power. The NIMITZ-Class CVN is the most effective, survivable and cost-efficient platform to accomplish this mission. We cannot reduce our force levels below 15 deployable carriers unless we drop some of our existing global commitments to our allies as well as our own national interests. The Navy does not establish these requirements, rather the force level requirements evolve from the following authority:

- from the President, whose National Security Strategy Report calls for a commitment to maritime superiority and the goal of a 600-ship Navy centered on 15 deployable carrier battle groups.

- from the Secretary of Defense, whose annual report to Congress states that "... the goals established for our naval forces strike a reasonable balance between the threat and national resources constraints. It is important to note, however, that those goals represent minimum objectives, with a corresponding acceptance of some degree of risk."

- from the Joint Chiefs of Staff and the Commanders in Chief of the Unified Commands, who in establishing warfighting requirements have long advocated an aicraft carrier force structure based on more than 20 CVs, in order to carry out existing requirements with reduced risk.

- from Congress, which has since 1981 consistently approved, endorsed, and directed funding to build the 600-ship Navy centered around 15 deployable aircraft carriers.

- from our allies around the world, with whom we are in alliance and to whom we are committed, thus linking our fortunes to all the world's great oceans. Carrier battle groups have long been the force of choice for signalling support to threatened allies by dissuading or repelling aggression.

- from peacetime requirements. The Navy conducts peacetime operations in the same waters in which we would engage the enemy in war, but at approximately 1/3 the level of effort. It takes three carriers to keep one forward deployed on an acceptable peacetime operational tempo, that allows sufficient time at home to sustain required retention of our career personnel. We now have the best, most highly motivated sailors the Navy has ever had since World War II. Many of you have seen these extraordinary young people first hand. We need to retain as many of them as we can. A return to the onerous days of the late 1970s through 1980, when many of our carriers had to remain at sea for periods greater than 150 days at a time because of reduced force structure, could quickly reoccur, if our commitment to 15 deployable aircraft carriers wavered.

- from a sound strategic appreciation of the conventional deterrent and warfighting contributions of aircraft carriers. Each carrier carries an embarked air wing, which is trained and equipped with 86 aircraft of ten different types, enabling integrated operations against submarines, surface ships, enemy aircraft and missiles, and enemy forces ashore, including thousands of miles inland, if necessary. No other aviation unit in the world has so many different capabilities with such enormous flexibility. If the task at hand requires intense air defense operations, as was required in support of Jordan in 1970, then the air wing mix is shifted in a matter of days to mostly interceptors; if close air support or precision bombing strikes are required, then dozens of bombers are added to the wing. The carrier based tactical air power continues to be the most used and useful asset in our military arsenal. It has no equivalent in terms of versatility across the broad spectrum of warfighting requirements from low intensity conflict to global war. Indeed, the readiness of these tactical air assets to fight and win has never been higher. Deployed carrier air wings enjoyed average mission capable figures of over 87 percent for the past year and proof of the product was amply demonstrated during the operations against Libya.

WHY LONG-LEAD FUNDING NOW FOR TWO REPLACEMENT CARRIERS? MAINTAINING THE FLEET AND SOUND BUSINESS STRATEGY

The FY-88/89 budget includes $600M and $800M respectively to begin procurement of the long lead equipment required to economically purchase two replacement CVNs. FY-88 funds will procure equipment to support a contract award for CVN 74 in FY-90. FY-89 funds will procure equipment to support both CVN 74 and a contract award for CVN 75 in FY-93. Since submission of the FY-88/89 budget, these carriers have been the focus of much discussion often based on incorrect information. To set the record straight for further discussion, let's begin with accurate information.

A balanced force of 15 deployable aircraft carriers is the core element of this administration's commitment to the 600-ship Navy and to maintaining the maritime superiority necessary to execute our national strategy. Fifteen carriers have been authorized and funded by Congress to fulfill this commitment. We have just commissioned the THEODORE ROOSEVELT (CVN 71) last October, which is the 14th deployable carrier; USS ABRAHAM LINCOLN (CVN 72) delivers in 1990 as the 15th; and USS GEORGE WASHINGTON (CVN 73) will join the fleet in 1991 as the replacement for the then 46-year-old USS CORAL SEA.

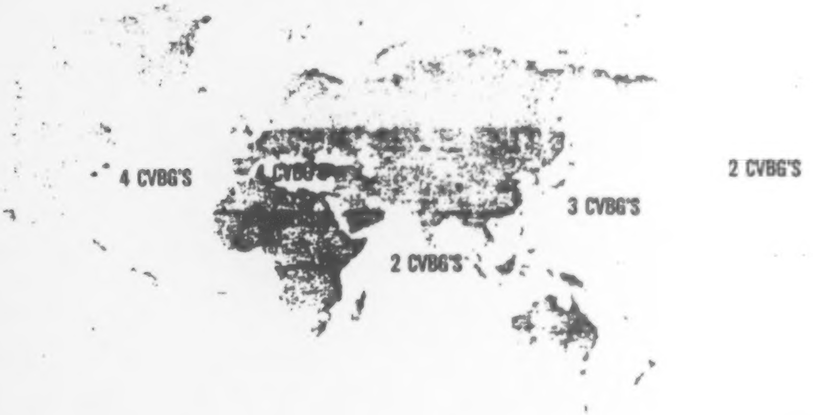
We cannot mortgage the future by hoping that our venerable but older carriers will remain indefinitely capable of meeting the changing threat posed by the Soviet fleet and the forces of its overseas proxies. The USS MIDWAY, commissioned in 1945, will be 52 years old when retired from active service, under this procurement strategy, and the follow on FORRESTAL-class carrier will be over 45 years old at retirement in 1999. An aging carrier force beyond 45 years means marginal warfighting capabilities, escalating maintenance costs, and increased time for ship repair service. MIDWAY and CORAL SEA, which are approaching 45 years of service at this time, substantiate this assessment.

Thus, these carriers are not intended to supplement current force levels, but to replace two of our present ships as they approach the age when repair and equipment updates required to meet current threats become economically infeasible. Carrier acquisition takes approximately eight years. Therefore, their inclusion in the FY-88/89 budget will provide timely replacement carriers by the end of the century. This initiative does not, as some critics would have the public believe, include a commitment to fund additional battle group assets. The cruisers, destroyers, and support ships for the 600-ship Navy are already in place or included in planned out-year budgets, and would be needed for their naval tasks even if we had no carriers.

SOUND BUSINESS STRATEGY: WHAT WE SAVE BY STARTING NOW

The fiscal reality of a declining total obligational authority and the requirement to submit a two-year budget demanded careful scrutiny of the existing FYDP to ensure that the best investment plans were being pursued. In preparing the FY-88/89 budget, review of long range business/investment strategies revealed that the best return on the topline Navy dollar could be obtained by restructuring the SCN account to accommodate the required replacement carriers to sustain the 15 deployable carrier force through the further use of the innovative CVN acquisition program currently in effect.

FIFTEEN DEPLOYABLE AIRCRAFT CARRIERS ARE THE MINIMUM ESSENTIAL FORCE DETERMINED BY THE JOINT COMMANDERS-IN-CHIEF TO MEET GLOBAL OPERATIONAL REQUIREMENTS AT A PRUDENT LEVEL OF RISK.



That review process revealed that by providing long lead funding for two new NIMITZ-class CVNs in this budget request, we could save an estimated $3B over the amount required to achieve replacement carriers in the previously planned and programmed ship acquisition plan, which would have caused disruptive peaks and valleys in the shipyard force, as well as in the procurement of steel and components.

Our estimate of $3.0B savings is based on a straight forward comparison of budget dollars required to procure replacement carriers. The $6.966B estimate for our proposed acquisition that begins with advanced procurement in FY-88 was compared to the $10.003B required to procure the replacement CVNs that were displayed in the Department's Extended Planning Annex for FY-94/96. The savings of "about 3 billion" is the difference, in budget dollars, between the two numbers.

Since submittal of the President's budget, several studies have asserted that the Navy has misstated these savings. Each such study has been carefully analyzed and has been shown to be fundamentally flawed for at least one of three reasons: overstating inflation dividends, disregarding or dismissing valid estimates of shipyard loading and program planning factors, or failing to take account of the full savings expected to be achieved by buying two carriers on a multi-ship basis, and their being bought "heel-to-toe" with the carriers already in production and with each other.

No study yet, though, has questioned whether our carrier acquisition strategy is the most frugal and cost effective in terms of providing new replacement carriers at the least possible cost to the taxpayer. Our track record speaks for itself and should give pause to the chorus of nay-sayers. Originally, a split buy of two new aircraft carriers in separate annual procurements for ABRAHAM LINCOLN (CVN 72) and GEORGE WASHINGTON (CVN 73) was estimated to cost $8024M. Our multiple ship award strategy in FY 1983 brought these costs down to $7270M, a savings of $754M. Furthermore, since contract award, sound management practices and the success of the Administration's national economic policies have achieved further cost savings of another $1274M, bringing the estimated end cost to $5996M for the two CVNs. These savings permitted us to return $450M from the carrier account alone for reprogramming to the MX program.

In addition to saving over $2.0B by our CVN 72/73 acquisition strategy, we will also deliver these ships earlier than a traditional split annual procurement approach. We estimate that CVN 72 and CVN 73 will each deliver 22 months earlier than with a traditional approach. THEODORE ROOSEVELT (CVN 71) was recently commissioned more than 16 months earlier than the original schedule through incentives we have established in the CVN 71 construction contract. Thus, a total of 5 additional nuclear aircraft carrier ship years will be achieved through our acquisition strategy for CVN 71, CVN 72, and CVN 73 alone.

The CVN series production and modular construction process applied to ROOSEVELT, LINCOLN, and WASHINGTON is demonstrating dramatic cost savings resulting from an efficient material acquisition profile and from ship building learning curves among the workforce. The early and below budget delivery of THEODORE ROOSEVELT in October 1986 confirmed the advantages to the taxpayer of this acquisition plan. Studies indicate that delays required in carrier procurement will increase the cost approximately $250M per ship per year. Adhering to a delayed replacement profile will result in the serious degradation of the shipyard workforce and supporting construction skill base. Today 42 states share the total industrial package that supports the current carrier construction program. The acquisition strategy which shaped the decision to advance the CVN replacement progrm is a composite business strategy having two basic elements, two carriers being bought on a multi-ship basis, and their being bought "heel-to-toe" with the carriers already in production, and with each other. Our program takes advantage of the productivity savings inherent in a stable "new carrier" construction workforce. The achieved savings result from this strategy and would not be possible with the procurement of CVN 74 and CVN 75 under the original schedule, because the builder would have experienced a three-year break in the production line. We are now in the same position we were for the FY-83 procurement of CVN 72/73 -- the builder has a new carrier under construction and the "heel-to-toe" production of two follow-on carriers offers significant savings. As can be seen by the accompanying chart, a two-year break in this required replacement program would be extremely costly and counter-productive to our American ship related industrial base.

CARRIER-RELATED INDUSTRIAL BASE

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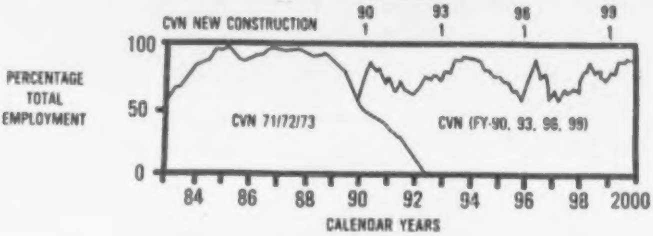

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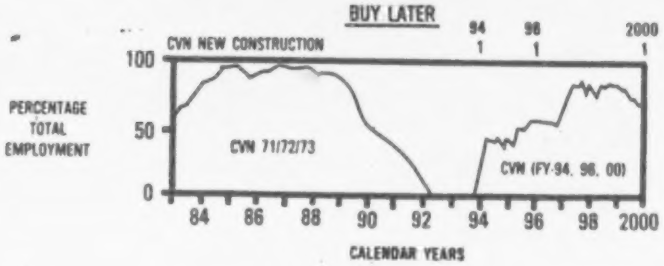


DEBUNKING OLD MYTHS

- Large vs. Small. There is no serious debate on the issue of large versus small carriers. All thorough studies that look at today's warfare environment at sea, give overwhelming support to the large NIMITZ-class carrier. Maintaining air superiority is essential to modern warfare, and the smaller size carrier is restricted in all capabilities, vis-a-vis, the large nuclear carrier. Some of the most important reductions in capability include: small carriers lack the speed and endurance of the big deck; the poor sea keeping qualities of smaller carriers will curtail flight operations sooner in bad weather; smaller deck areas limit the required aircraft in performance as well as numbers; the reduced volume on smaller ships limits weapons mix and storage capability which equates to reduced sustainability and increased requirements for underway replenishment; a ten year review of carrier landing accidents showed the smaller decks with nearly double the rate of the NIMITZ-class; the large deck carrier is able to sustain far greater combat damage and continue operating due to built in redundancy as well as superior damage limiting capabilities. Smallness of size does not diminish detectability. In today's world of satellite technology and sophisticated reconnaissance systems, a 10,000 or even a 5,000 ton vessel runs about the same risk of being detected as a 90,000 ton carrier. To summarize, no ship combines the vast array of offensive and defensive capabilities in such a powerful cost-effective platform with equivalent survivability and economies of scale as the NIMITZ-class carrier. If you want to win the high jumping championship you need a man who can jump seven feet, not seven men who can jump one foot. So it is that in responding to a wide variety of contingencies where the dominance of the air is vital to mission success, nothing can substitute for the large deck carrier.

- Vulnerability. The sophisticated technology of modern weapons and delivery systems makes everything vulnerable to a degree. But large deck carriers are the least vulnerable and most survivable ships we have along with our recently refurbished battleships. Their speed and maneuverability make them far less vulnerable than a land base which can't move at 31 knots or far less vulnerable than a Army division which moves at about 4 knots. It is one thing to hit a carrier with a missile; it is another to damage it sufficiently to prevent it from launching aircraft, and it is quite another order of magnitude to sink it.

While smaller ships have far less to throw at incoming threats, and while a single hit by a Soviet cruise missile can put a smaller ship out of action, the larger carrier can bring into play a far greater array of defenses to prevent itself from being hit. If it does get hit, its greater size, greater degree of watertight compartmentation, greater damage control resources, and other survivability features enable it to absorb several such hits under most circumstances and continue to carry out its mission. No ship currently in commission, except the larger carrier, has the huge mass and structural strength to withstand repeated hits by modern Soviet cruise missiles. And no ship but the carrier can dominate the air space within 500 - 800 hundred miles of the battle group, making an attack much more difficult and less likely to succeed. Thus, the vulnerability argument, when analyzed carefully, becomes one of the strongest arguments we have for building large, powerful, survivable ships. The Soviets have gotten the message and now are entering the large deck carrier competition. The future threat clearly calls for the requirement to sustain our level of 15 large deck carriers.

- Nuclear vs. Conventional. For aircraft carriers, the case for nuclear propulsion is overwhelming. The space needed in conventional carriers for fuel oil provides a nuclear carrier with three times the ammunition and four times the aircraft fuel storage. This provides greatly increased endurance in combat between replenishments and fewer replenishment ships. Its reactor fuel is good for 25 years, eliminating the oil tanker umbilical cord. The latter advantage is especially important when operating, for example, in the Indian Ocean. Also of potentially substantial importance is the extra speed of the nuclear carrier. In a crisis in the Eastern Mediterranean, for instance, a nuclear carrier can make a high speed transit from Norfolk two days sooner than a conventional carrier. Pilots close-in on final approach, and corrosion control officers would also add that it is good to get rid of stack gases and smoke. The initial investment cost differential between conventional or nuclear powered carriers is more than offset over the service life of the nuclear carrier. This fact and the overwhelming military advantages led to Title VIII of the Defense Authorization Act of 1975 stating that new construction of major combatant vessels of the U.S. Navy authorized subsequent to the date of the act becomes law shall be nuclear powered.

ARE WE SHORTCHANGING OTHER PROGRAMS? NO.

Readiness and Sustainability

We have not sacrificed readiness and sustainability to support our force structure. Quite the contrary is the case. In our cufrent budget submission, readiness and sustainability will increase its share of the Navy's total obligational authority from 60.5 percent to 63.7 percent. Of the four pillars, sustainability has witnessed over 11 percent annualized real growth from FY-80 to FY-89 -- more than double any other category in our budget pillars.

Indeed, the facts speak for themselves. Today's fleet is more ready to go in harm's way than at any time in peacetime history. In the past six years, overall combat readiness for surface ships has improved by 111 percent, for nuclear attack submarines by 69 percent and aviation squadrons by over 200 percent. The importance of sustaining this level of readiness is demonstrated by our nation's reliance on the Navy to respond with flawless performance to contingencies such as the Achille Lauro episode and the strike on facilities that supported terrorism in Libya. In the area of sustainability, despite the fact that there is a two to three year lag between funding and delivery, our overall ordnance stocks have grown between 20 and 90 percent larger than they were in 1981.

Aircraft Procurement

The planned aircraft procurement profile to meet projected requirements is on track and has not been mortgaged to pay for CVN 74/75. With CVN 74 replacing MIDWAY, the nominal increase of 10 aircraft in the notional airwing is easily accommodated under the existing program. CVN 75 will be replacing a FORRESTAL-Class in the late 1990's and the projected notional airwing will transfer without impact to the new CVN. In FY-95 we will have a projected inventory of 2321 carrier aircraft to fill the 1306 requirement for 14 Active and 2 Reserve Air Wings as planned. This allows the Navy sufficient tactical aircraft to manage attrition, pipeline, and depot maintenance requirements and fully outfit the 15 deployable aircraft carriers. Increased interoperability with USN/USMC aircraft, purposely procured with identical capabilities, further enhances the total Department of the Navy's ability to carry out the maritime strategy.

Other Services

Recently the argument has been presented that the acquisition program for these replacement carriers has been at the expense of other services' programs. This is not the case. Long lead funding for the two CVNs was provided completely within planned Navy budget authority. Army and Air Force programs are not paying for Navy aircraft carriers.

In summary, Navy CV/CVN force structure and APN investment strategies are in balance and matched for the threat of 1990. The overall requirement to replace our aging carriers is not new; just the timing and procurement strategy have changed. Fiscal constraints demand that we find ways to optimize the Navy's topline spending. These two replacement carriers will be carbon copies of USS NIMITZ with no changes except those that are cost reducers benefiting from advanced technology like fiber optics. Funding these starts now will avoid increased costs later on.

CONCLUSION

Can we afford two carriers starting now? The answer is an unequivocal "yes". The moderate adjustments required in the shipbuilding and other procurement accounts are acceptable when spread out over the 8-year outlay of the program. The dollars saved allow buy back of these adjustments in out-year budget lines. Indeed, we cannot afford not to start them. To fail to do so might someday put us in the untenable position of not being able to respond affirmatively, forcefully, and effectively to the established requirements for maritime superiority. We maintain the industrial capacity to rapidly increase production of ammunition and even aircraft but this is not possible with our carriers.

Indeed, thanks to strong Congressional support for the President's defense recovery program, we have now, under construction and fully funded, all of the ships necessary to attain a 600-ship Navy centered on 15 carrier battle groups, four battleship battle groups, and 100 nuclear powered attack submarines.

This "good news" should not blind us to the requirements of the future. A future of zero-growth budgets -- or worse -- would mean that we will be unable to sustain a 600-ship Navy -- or capable defense in relation to the threat and global U.S. interests. We know from painful experience in the 1970s, that the damage done by no-growth funding is more than the mere percentage budget loss would indicate. When the rhetoric of commitment collides with the reality of unreadiness, peace becomes the victim. The cruelest arithmetic of all lies in the number of lives lost and resources squandered if deterrence fails. Ultimately, this is the most crucial equation in the budget debate.

Is sufficient defense funding beyond our means? Throughout the past two decades, many commentators favoring a reduced defense effort have repeatedly predicted that the American people would not support sustained defense growth. That refrain is still put forward by some as a fact of life. While it may express their hopes, it is not supported by history. That view takes as its norm the flat or even declining figures of the immediate post-Vietnam War period. In fact, except for those years, post-World War II naval budgets have maintained growth commensurate with our national economy. The middle and late Seventies, by contrast, are now being seen as an anomaly in U.S. history. It is not apparent that the American people wish to "restore" that aberrant pattern of declining numbers of ships, morale, and readiness. When you look at the troubled global environment, the question is not whether we can afford a 600-ship Navy, but whether we can afford not to sustain this level of effort. The freedom and quality of life of future generations of Americans depend on this commitment.

Today we have a strategy that sustains deterrence not only because it meets the threat but also because it deploys forces ready and able to fulfill it. America is fortunate to have in the President and the Secretary of Defense and in positions of responsibility in Congress, leaders who recognize the truly incalculable cost of war. They recognize that, above all others, national defense is the first and most vital of all government services. As Alfred Thayer Mahan so aptly put it, "True defense consists in imposing upon the enemy a wholesome fear of yourself." We in the Department of the Navy have every confidence that the Congress will provide us with the resources we need to carry out our mission in a complex and frequently hostile world.

ADVANCE QUESTIONS AND ANSWERS—HEARING ON EARLY CARRIER REPLACEMENT PROPOSAL

Question. Previously, the Navy planned to fund the replacement of the two most aging carriers in fiscal years 1994 and 1996. Would the Navy's previous plan have provided for the timely replacement of carriers and maintained a 15 deployable carrier force throughout the 1990s? If so, is the early carrier replacement proposal based principally on economic considerations?

Answer. The Navy's previous plan to maintain 15 deployable carriers would have required extending existing carriers beyond their service life. As an example, under the previous schedule, CVN 74 would have replaced *Midway* in fiscal year 2000 when *Midway* would have been 55 years old. CVN 75 would have replaced another carrier which would have exceeded the 15 year life extension provided by the CV SLEP program. Such a strategy would have put us at substantial risk based on our recent experience in maintaining our oldest CVs and their reduced warfighting capability relative to a modern carrier. The inherent long-range planning, which preparation of a 2-year budget required, focused more clearly on this issue than in the past. The requirement to replace our aging carriers is not new, just the timing and procurement strategy have changed. Fiscal constraints demand that we find ways to optimize the Navy's topline spending. The moderate adjustments required in the shipbuilding and other procurement accounts are acceptable. The dollars saved allow buy back of these adjustments in out-year budget lines. Indeed, we must start CVN-74/75 now.

Question. Navy cost calculations provided to the committee project a cost savings of $3.037 billion (in then-year dollars) for the early carrier replacement proposal. These calculations show that inflation avoidance represents $1.277 billion of the estimated savings. An additional $1.005 billion of savings result from the fact that the fiscal year 1994 and fiscal year 1996 carriers were to be upgraded versions of CVN 72/73 and were to be procured with a different acquisition strategy. Apparently, only $.755 billion of the savings is associated with potential production efficiencies at the shipyard. Is this the correct interpretation of the Navy cost savings calculations?

Answer. The Navy's estimate of $3.0B savings was based on a straight forward comparison of budget dollars required to procure replacement carriers. The $6.966B estimate for our proposed acquisition that begins with advanced procurement in fiscal year 1988 was compared to the $10.003B required to procure the replacement CVNs that were displayed in the Department Extended Planning Annex for fiscal year 1994/96. The savings of "about $3 billion" is the difference, in budget dollars, between the two numbers.

The figures cited in the question are based on a CBO study and a subsequent SASC staff paper which approach the savings analysis in a different manner, using fiscal year 1983 constant dollars and making several assumptions. These techniques introduce some significant errors into the analysis that need to be addressed.

The inflation dividend estimate is incorrectly calculated. Data, in fiscal year 1983 dollars, was provided by the Navy to allow a comparison of the CVN-72/73 return costs with the Navy pricing of CVN 74/75 to demonstrate that the Navy's estimate was consistent with the earlier carrier buy. However, the CBO study and the SASC staff paper used this data as a baseline for the inflation calculation, a methodological error. A correct calculation would have compared the inflation savings from procuring CVN 75 in fiscal year 1993 versus fiscal year 1996. The SASC staff methodology results in an overstated inflation dividend of over $500 million.

The staff paper discounts the savings resulting from the different Navy acquisition strategies for CVN 74/75 procurement by stating that only "heel-to-toe" portion of the acquisition strategy should count as a savings. This misses the fundamental point that the new acquisition strategy which drove the decision to advance the CVN replacement program was a composite strategy having two basic elements, two carriers being bought on a multi-ship basis, and their being bought "heel-to-toe" with the carriers already in production and with each other. The Navy program takes advantage of the productivity savings inherent in a stable "new carrier" construction workforce at Newport News. The achieved savings result from this strategy and would not have been possible with the procurement of CVN 74 and CVN 75 under the original schedule because the builder would have experienced a three-year break in the production line. We are now in the same position we were for the fiscal year 1983 procurement of CVN 72/73—Newport News has a new carrier under construction and the "heel-to-toe" production of two follow-on carriers offers significant savings.

It is important to highlight our most recent experience with CVN 72/73 to demonstrate the soundness of our savings estimates. Our multiple ship award strategy in fiscal year 1983 brought these costs down to $7270M, a savings of $754M. Furthermore, since contract award, sound management practices and the success of the administration's national economic policies have achieved further cost savings of another $1274M, bringing the estimated end cost to $5996M for the two CVNs. These savings permitted us to return $450M from the carrier account alone for reprogramming to the MX program.

In addition to saving over $2.0B by our CVN 72/73 acquisition strategy, we will also deliver these ships earlier than a traditional split annual procurement approach. We estimate that CVN 72 and CVN 73 will each deliver 22 months earlier than with a traditional approach. *Theodore Roosevelt* (CVN 71) was recently commissioned more than 16 months earlier than the original schedule through incentives we have established in the CVN 71 construction contract. Thus, a total of 5 additional nuclear aircraft carrier ship years will be achieved through our acquisition strategy.

Question. How did the Navy calculate the potential production efficiencies at the shipyard? What assumptions were made about future shipyard work and labor levels?

Answer. The Navy calculations were based on CVN 72/73 experience in addition to Newport News shipyard forecast of their workload which was checked against Navy program planning factors to ensure Navy programmed work was included and unprogrammed work was not. It was based on the best information available and it assumed that future shipyard loading for both Newport News and Electric Boat, the other SSN/SSBN contractor, would not result in the closing of Electric Boat.

Question. Has the Cost Analysis Improvement Group conducted an independent estimate of the Navy's projected cost savings? If not, why not? If so, what were the results?

Answer. The OSD Cost Analysis Improvement Group (CAIG) is chartered to review life-cycle cost estimates for new weapons systems which are subject to Defense Acquisition Board (DAB) review. CVN 74/75 are *replacement carriers* utilizing the *Nimitz*-Class repeat design. CAIG has indicated it is not within their charter to review CVN 74/75 procurement.

Question. The current Five-Year Defense Plan assumes an annual rate of three percent real growth in the defense budget. Is the Navy's early carrier replacement proposal independent of assumptions about increases in the level of the defense budget topline? If not, at what reduced level of defense spending would the Navy set aside the early carrier replacement program?

Answer. Aircraft carriers are the single most important element of any naval force providing the irreplaceable air power necessary to command the four dimensions of naval warfare. If ships have to be retired because of reduced top line funding in the future, based on the CINCs' stated requirements, aircraft carriers would be the last to go.

If for some unforeseeable reason a future President would seek to reduce the numbers of deployable carriers, the older carriers would be retired first. Under any conceivable scenario, it would remain most cost effective to still procure new carriers at the rate of one every three years. For instance, if the force were reduced to ten carriers, financial analysis indicates that retiring carriers at thirty years of service and procuring a new carrier every 3 years would be the most cost effective and preferred option due to the higher costs that can be avoided by not maintaining and operating older ships. The key point is that at any budget level, we must replace the aging carriers. As a matter of fact, the lower the top line goes, the greater the premium on replacement to avoid being eaten up trying to maintain and operate aging carriers.

Question. The Program Budget Decision for the early carrier replacement proposal shows that the following reductions were taken to accommodate the advance procurement funding in fiscal years 1988 and 1989:

[In millions of dollars]

	1988	1989
Shipbuilding and conversion	−244	−147
Aircraft modification		−250
Other procurement	−200	−200
Weapons procurement	−200	−100

[In millions of dollars]

	1988	1989
Military construction		−100

Are these the areas where budget reductions were taken to provide funds for advance procurement for the two aircraft carriers?

Answer. The Program Budget Decision (PBD) being cited in the question is the mechanical process by which we display an allocation of resources. In this case the allocation resulted from a detailed budget scrub that shifted funding from programs because of either a change in Navy priorities, a change in requirements, or the inability of a program to execute prior year funding. Fiscal years 1988/89, unlike the out years, were subjected to an in-depth budget review and the PBD was the result of that review.

Question. The Program Budget Decision also shows that two ships were deleted from the fiscal year 1990 program to provide partial funding of the first carrier. These ships were a DDG 51 and an LSD 41. Is this correct?

Answer. This information is correct, however, these adjustments were made in order to effect the savings that we could achieve by our proposed two-carrier buy. These ships were not deleted but rather delayed. The delays to the LSD 41 and DDG 51 programs did not create a cost penalty for the Department outside of inflation. In the case of the LSD we even manage to improve matters by taking a 1-0-2-0-2 profile and making it a 1-0-1-1-2 profile and smoothing out the production flow. As for the DDG adjustment our current profile still provides for an average of five AEGIS platforms a year, which represents the minimum number required to maintain effective competition.

Question. In fiscal year 1989, $200 million is requested in advance procurement funding for the second carrier to be constructed in fiscal year 1993. Is there any precedent for providing advance procurement funding 5 years prior to the year of full funding?

Answer. The budget requests funds for advanced procurement starting four years, not five years, prior to keel laying for the CVN 75. This situation is fully consistent with the carrier program authorized and appropriated in fiscal year 1983. The fiscal year 1983 program provided long lead funding four years in advance of keel laying for the CVN 73. This acquisition has visibly demonstrated that the most effective means to achieve significant savings is to have the long lead funding available to achieve economic ordering quantities (EOQ) of materials and components. As a matter of fact, the Department has requested and had appropriated funds for long lead materials as much as 5 years in advance of the full funding year.

Question. In fiscal year 1983 full funding for CVNs 72 and 73 was provided by Congress. That has been preceded by advance funding of long lead items in fiscal year 1981 and 1982, consistent with DOD directives and practice. Congressional practice, as well, has been to limit long lead item funding to not more than two years prior to full funding. This profile is followed in the administration's request for CVN 74; however, long lead funding for CVN 75 is requested five years in advance of full funding. What compelling reasons are there for Congress to depart from normal practice in the case of CVN 75? What are the implications of delaying long lead funding for CVN 75 until fiscal year 1991 in order to employ funding profile consistent with normal practice?

Answer. To alleviate any misunderstanding, it should be emphasized that we are only requesting advance procurement funding four years in advance of the full funding year for the CVN 75. The primary reason for this, of course, is to achieve savings comparable to those achieved by the fiscal year 1983 multi-carrier acquisition. That acquisition also provided four year long lead funding for the second ship. Congressional practice has always been to appropriate advance procurement funds as required, however, this process has been altered in the past when long lead funding supported and intelligent business strategy, the most economic acquisition plan and timely delivery of the end-item. As a point of interest, we have had as much as five years advance procurement approved in the past. Denying these funds, the $200 million as requested would disrupt the planned "heel-to-toe" acquisition strategy and would cost the government easily many times more than that amount.

Question. Discussions of maritime strategy have narrowed to debates over relatively few aircraft carriers. Could there be a maritime strategy without aircraft carriers? With fewer carriers? Please address the question in terms of carriers, not carrier battle groups.

Answer. The maritime strategy—a strategy which is firmly set in the context of national strategy and which emphasizes coalition warfare and the criticality of allies, is the conceptual framework on which we base our naval planning. It is a strategy which has been adopted by the President and Secretary of Defense, reviewed and concurred with by our allies and has been subjected to intense Congressional scrutiny with the finding, to quote Chairman Bennett of the HASC's Seapower and Strategic and Critical Materials Subcommittee that, "The goals of the maritime strategy are reasonable and logical in light of the importance of the sea to this country and the breadth of the ocean areas over which our interests range." It is a strategy which requires the commitment to 15 deployable aircraft carriers.

There could not be a maritime strategy without aircraft carriers because carriers provide the irreplaceable element of air support that operates in the four dimensions of naval warfare, without which any naval force, sealift, or commerce cannot survive against the modern, technologically sophisticated threat of today. The bottom line is carriers provide the vital air superiority that gives a lease on life for all other ships.

Fewer than 15 deployable aircraft carriers would not allow the Navy to meet our current alliance commitments. Multiple carriers are needed for sustained combat operations, 24 hours a day, in any high threat environment. The areas we must deploy to and operate in in times of war are not the choice of the Navy but rather are dictated by our national strategy and alliance commitments. A successful maritime strategy cannot be carried out with fewer carriers, unless a region of the world currently requiring our naval presence could accept removal of our naval combatant forces. The Joint Chiefs of Staff and the Commanders in Chief of the Unified Commands have long recognized this in establishing warfighting requirements based on more than 20 CVs—a position validated by 11 Chairmen of the Joint Chiefs.

What would fewer than 15 deployable aircraft carriers mean for our peacetime maritime strategy? It would mean wearing out our ships, our planes, and most tragically, our people. It would mean a return to the onerous days of the late 1970s through 1980 when our carriers often had to spend more than 150 consecutive days at sea during deployments away from homeport of greater than 240 days, to sustain vital presence and deterrent operations in key geopolitical areas, and which caused an exodus of talent from the Navy that has required years to reverse.

By all counts, then, we must have 15 deployable aircraft carriers to carry out the peacetime and wartime requirements which fall on the Navy from national and alliance commitments. To retreat from the long established goal of achieving 15 deployable aircraft carriers would signal a failure of national resolve which would not go unnoticed by our foes and friends alike. Such a retreat would embolden the Soviet Union, weaken the NATO alliance and our ties to crucial Pacific allies, and would demonstrably endanger the security interests of the United States.

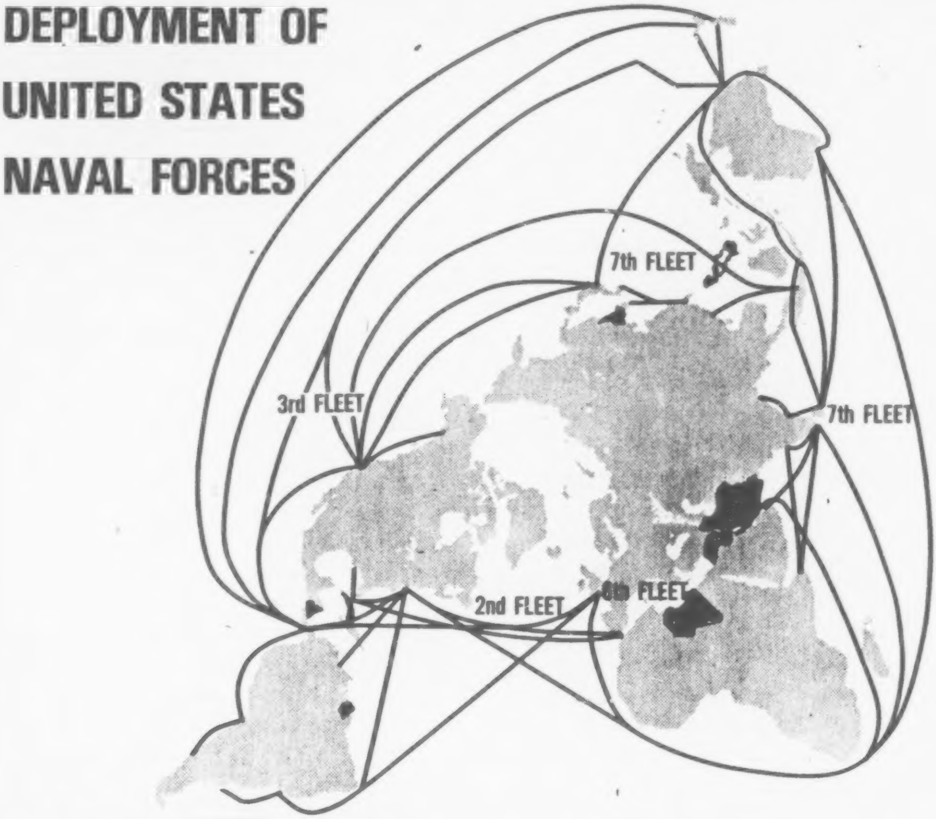
Question. Sacrifices in many programs have been made to accommodate long lead item funding for CVN 74 and CVN 75 in fiscal years 1988 and 1989. While this year the President's budget met the Gramm-Rudman target, the projections for the next several years indicate there will be severe pressures on the defense budget right at the time we would expect to fully fund CVN 74. Of course, the economic conditions for the year in which CVN 75 would be fully funded are uncertain, and serious questions are raised by the requested funding profile for CVN 75. In the fiscal climate anticipated in the near years, let alone the out years, difficult choices will be presented. Clearly, it would endanger our naval warfighting capability, and hence, our security, if more of the same kind of sacrifices were made for CVN 74 and 75. In order to avoid the risk of driving its force structure to a state of imbalance, is the Navy prepared to reduce carrier force levels in order to pursue the aggressive modernization program implied by the decision to request long lead funding in fiscal years 1988 and 1989 for CVN 74 and 75 respectively?

Answer. We do not foresee the ill-logic implied in your question. But if force structure was to be reduced in the future, carriers would be the last to be reduced.

Senator KENNEDY. Admiral Mustin.

STATEMENT OF VICE ADM. HENRY C. MUSTIN, U.S. NAVY, DEPUTY CHIEF OF NAVAL OPERATIONS FOR PLANS, POLICY AND OPERATIONS

Admiral MUSTIN. This chart shows you where the fleet is today. It shows the five geographical areas in which the fleet is operating today, and I would like to make a couple of quick points from it.



DEPLOYMENT OF UNITED STATES NAVAL FORCES

First, the fleet will be in those same areas in war and peace. Second, the Soviets may be in those areas in peace, but they will not be there in war, and that is because Soviet naval aviation is not naval aviation and that is what aircraft carriers do for you.

The final point that the chart makes is it shows the sea lines of communication worldwide, and it shows that for the United States being an island nation is a two-edged sword. The seas provide us a measure of security; they also provide us a measure of dependency. The Soviet Union, which also gets a degree of security from the seas, particularly in the Pacific, does not have that same dependency.

I will not talk today about the wartime carrier requirements because since 1947 eleven consecutive Chairmen of the Joint Chiefs of Staff of all services have validated carrier requirements in excess of 20.

If I may, I will discuss the peacetime requirements and problems. We have a basic resource allocation problem in peacetime. It is in three parts.

PEACETIME CARRIER PROBLEM

- WE NEED A BALANCE AMONG PEACETIME COMMITMENTS, TRAINING FOR WAR, AND REASONABLE TIME AT HOME FOR OUR SAILORS
- WE USE OUR CARRIERS WHEN WE MEAN BUSINESS
  - CV IN 70% OF ALL INCIDENTS CHARACTERIZED BY POLITICAL VIOLENCE SINCE 1946
  - IN LAST 10 YEARS, CRISIS RESPONSE LOCUS HAS SHIFTED TO INDIAN OCEAN, PERSIAN GULF, CARIBBEAN AND MIDDLE EAST
    - AIR THREAT PREDOMINANT: CUBA, IRAN, LIBYA, SYRIA, AND NORTH KOREA AIR ORDER OF BATTLE OVER 2,000 AIRPLANES, 34 SUBMARINES
    - Overflights, Land Bases Are Problems, But Requirement For Air Superiority Is Non-Negotiable

First, we use the carriers when the country means business. A carrier is a movable air field. You can take it anywhere in the world without crossing anybody's boundary and without violating anybody's air space. You do not have the cost of constructing air fields that sometimes come back to bite you, like the one in Cam Ranh Bay, which I still have difficulty discussing dispassionately. And you have heard the discussion about the problems we see with the air bases in Spain today.

Also, when you build air fields ashore you have to defend them. The problem of the aircraft losses in Vietnam was mentioned by Senator Warner. I would also point out that in the Korean war every allied airfield was overrun at least once. And today NATO is looking at an expenditure of $2.6 billion to defend the airfields in Italy alone.

That is what you get for aircraft carriers—air superiority. And as shown in the Falklands and mentioned by the Secretary of the Navy, air superiority is non-negotiable. The dominant threat in peacetime from the Third World is airplanes. You see the orders of battle on the chart: 2,000 airplanes in our potential enemy inventory, 34 submarines, of which none is nuclear.

When the Royal Navy went down to the Falklands without an aircraft carrier, three of the four combatants that were sunk were sunk by airplanes dropping iron bombs and not by fancy new guided missiles. And those airplanes were A-4's, which are so old that they have been in our inventory since 1976.

PEACETIME CARRIER PROBLEM (CONTINUED)

- AT THE SAME TIME, OUR DEPLOYMENTS SUSTAIN OUR ALLIES
    - SUPPLIES AND COMMERCE MOVE ON SURFACE OF OCEAN
    - 41 ALLIES SEPARATED FROM US BY SEAS
- EQUALLY IMPORTANT, WE NEED TO TRAIN WHERE WE'LL FIGHT: NORWEGIAN SEA, NORTHERN PACIFIC
    - CINCLANT TO SASC 23 FEB 1987, "IF THE ATLANTIC COMMAND ALLOWS THE MARITIME BATTLE TO TAKE PLACE IN THE MIDATLANTIC—SOUTH OF THE NORWEGIAN SEA—WE WILL LOSE"
        - NORWEGIAN SEA IS HARSH; 41 CARRIER DAYS IN LAST 10 YEARS

An additional part of the first part of the problem is that our deployments sustain our allies. There is nothing new in that observation. That is basic sea power theory. Forty-one of our allies are separated by the ocean. All the world's commerce moves on the ocean. In order to be able to move that commerce, you must be able to defeat the air threat, and it is not enough to hide from it.

The second element of the problem is that we have to train where we are going to fight. CINCLANT told the Senate Armed Services Committee recently that if the Atlantic Command permits the next battle of the Atlantic to be fought in the Atlantic, we will lose it. He said that essentially because as SACLANT he has said publicly for a number of years that NATO only has 50 percent of the forces necessary to fight that battle in the Atlantic and win it.

We believe therefore that we must fight it in the Norwegian Sea, and in order to do that we must have the carriers which provide the air cover for the towed array surface ships and the patrol aircraft to carry out their ASW mission, and also provide the defense for the nation of Norway which is critical in the view of the Supreme Allied Commander, Europe.

The Norwegian Sea is a harsh environment. We have got to go up there for two reasons. I have commanded carrier groups up there and it is a very difficult operation. On the *Forrestal* in 1981, I saw an A-7 aircraft blown off the flight deck when it froze, and I have never seen that played in a war game or considered in anybody's stateside systems analysis.

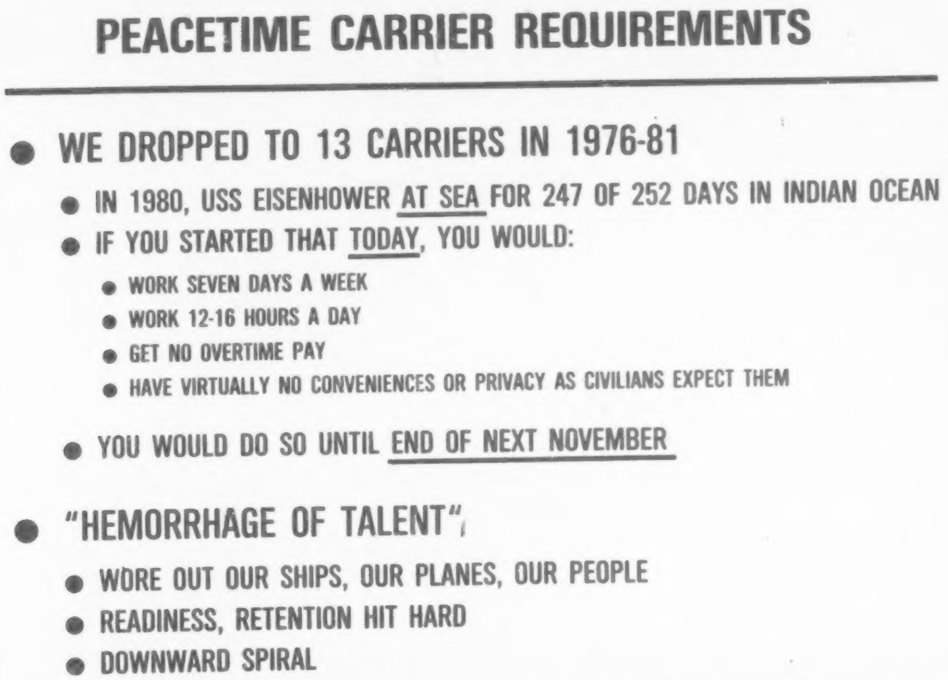
You are talking about water temperatures such that if you go in the water your life expectancy is measured in seconds. You are talking about failure rates with machinery because lubricants break down, that require different spare parts replacement allocations.

You are talking about weather that changes unpredictably from minute to minute. What happens is, number one, no one is sitting around in short-sleeved khaki shirts with zinc oxide on their nose.

People are trying to survive in the most difficult war-fighting environment that we know today.

The second reason that we have to go up there and learn how to fight is the command and control required. When I commanded Northern Wedding and Ocean Safari in the last two years, we had U.S. Navy, U.S. Marine Corps, U.S. Coast Guard, nine NATO nations, U.S. Air Force, Air National Guard, Royal Air Force, and Norwegian Air Force, all flying in the same air space.

That operation is complicated. The skills that are necessary to execute it are perishable and can only be learned on-scene.



PEACETIME CARRIER REQUIREMENTS

- WE DROPPED TO 13 CARRIERS IN 1976-81
  - IN 1980, USS EISENHOWER AT SEA FOR 247 OF 252 DAYS IN INDIAN OCEAN
  - IF YOU STARTED THAT TODAY, YOU WOULD:
    - WORK SEVEN DAYS A WEEK
    - WORK 12-16 HOURS A DAY
    - GET NO OVERTIME PAY
    - HAVE VIRTUALLY NO CONVENIENCES OR PRIVACY AS CIVILIANS EXPECT THEM
  - YOU WOULD DO SO UNTIL END OF NEXT NOVEMBER
- "HEMORRHAGE OF TALENT"
  - WORE OUT OUR SHIPS, OUR PLANES, OUR PEOPLE
  - READINESS, RETENTION HIT HARD
  - DOWNWARD SPIRAL

The third reason that I showed on my first slide is we have to be reasonable to our people. 1976 through 1981, we dropped to 13 carriers, and when you do that you operate in the environment that you see on the chart, you would start doing what I just showed you there today, and you would do it every day 24 hours a day until the end of next November.

When we did that, our circuits were overloaded. We had a higher peacetime operating tempo than we had at the height of the Vietnam war. People would not stay in the Navy. We were unable to get relief from commitments during that period. Indeed, during that period, which Mr. Komer was associated with, the requirement for an additional carrier in the Indian Ocean was created.

PEACETIME CARRIER REQUIREMENTS (CONTINUED)

- WHAT SHOULD WE GIVE UP?
  - OUR PERSONNEL POLICIES, WHICH ALL INDICATORS SHOW TO BE REASONABLE AND FAIR?
  - THE MEDITERRANEAN?
  - THE INDIAN OCEAN?
  - THE CARIBBEAN?
  - THE NORTHERN PACIFIC?
  - THE NORWEGIAN SEA?
- WE HAVE FIVE KEY GEOPOLITICAL AREAS FOR CARRIER OPERATIONS
  - IT TAKES THREE CARRIERS, OVER THE YEARS, TO KEEP ONE DEPLOYED
- 15 DEPLOYABLE CARRIERS ARE MINIMUM NEEDED TO SATISFY ALL REQUIREMENTS
  - PRIOR TO 1970, NEVER HAD LESS THAN 23, SO REQUIREMENT NOT RECOGNIZED
  - SINCE EARLY '70s, NAVY HAS BEEN CONSISTENT THROUGH FIVE CNOs OF ALL WARFARE SPECIALITIES

So of all the variables associated with the less than 15 carrier posture—and again, I am not talking about the repeatedly substantiated Joint Chiefs of Staff over 21 wartime requirement—we say, what should we give up? We do not want to give up our personnel policies. All of our reviews, all of our statistics, show that they are reasonable and fair.

We do not want to give up the Mediterranean. That is the southern flank of NATO. That is where we are in position to deter Qaddafi and in position to support Israel.

We do not want to give up the Indian Ocean because of the enormous oil interests we and our allies have there.

We do not want to give up the Caribbean, where Cuba is astride those stragetic sea lines of communication, in which 50 percent of all U.S. imports flow in through our gulf ports, and in which the Soviets have recently increased their annual presence to 1,300 ship days per year.

We do not want to give up the northern Pacific, where there is an increasing threat to the State of Alaska, to the Alaskan pipeline, to our own Northwest Pacific, to Hawaii, and to our allies in the Far East.

We do not want to give up the Norwegian Sea, which CINCLANT has told you is the key to the battle of the Atlantic and which, if you lose, you then undermine the entire credibility of the conventional deterrent for the defense of Europe.

We have five key areas in which we must operate carriers. We have found over the years that it takes three to keep one at sea. Fifteen deployable carriers is our minimum. Since we have recognized that requirement, the Navy has held consistent to it through five Chiefs of Naval Operations of all warfare specialities.

Thank you, Mr. Chairman.

Senator KENNEDY. Thank you very much, Admiral.

We will follow the earlier proceeding just in terms of time and rotation.

Mr. Secretary, I would like to ask the first question about the procedural issues that were followed in the recommendations of the carriers to the Senate and the House of Representatives, because I feel that that does reflect on the issue of the merits and its true purpose.

As I understand, the Navy had long planned to fund these replacement carriers in the nineties, not now, and none of the official communications to Congress included any mention of funds for the new carriers, not in the posture statements of the Joint Chiefs, including the one submitted for this year, not in the last three editions of the Navy's five year ship building plan.

We were not the only ones caught by surprise. We had made part of the record earlier today a memorandum of Admiral Crowe which clearly indicates that he was not anticipating the funding replacement carriers so early.

As I understand, you kept the proposal out of the normal DOD budget review process. Given the large amounts of dollars involved and the inevitable displacement of other programs, why did not the earlier carrier replacement proposal receive the full review through the DOD's normal processes?

Secretary LEHMAN. Mr. Chairman, when we went through the summer DRB review, simultaneously, of course, there was a great deal of effort going on, as it always is, in NAVSEA and in our business management side, in the contracts and business execution.

We saw several new developments during that period, one being the conclusion of the last of the major contracts for the execution of the two carriers currently under construction at Newport News. That gave us better visibility into the actuals, the costs, the benefits, and the future requirements for the components of carriers that make up so much of the cost.

We then saw from that analysis of things like the costs of continuing to produce fuel cores and reactor vessels and keeping the industrial base that, if you redid the sums on the savings that would be derived from moving the carrier up, rather than going through the valley of manning at Newport News, and not only Newport News but the component manufacturers in the nuclear area and in the major machinery area—and I would like to submit those curves.

Senator KENNEDY. I wish you would, because you will have a difficult time convincing me, as someone who has had Quincy Shipyard, or used to have one there. They know pretty well more than 6 to 8 months or a year, a year and a half, exactly where those flow lines are going to be in terms of contracting, subcontracting out.

And to suggest that the reviews that you just had last summer brought sufficient kinds of new information to this issue in terms of the savings is somewhat difficult to flesh out.

But you will provide those?

Secretary LEHMAN: Yes, sir.

[The information follows:]

In May of 1986, two significant events occurred: the Extended Planning Annex (EPA) was priced with the next two carriers budgeted for FY 94 and FY 96 and the annual Ship Cost Adjustment (SCA) review was completed.

Two things were clear: deferring purchase of the carriers to the FY 94/96 timeframe would be a very costly decision and the multiship strategy utilized for the FY 83 ship was yielding much higher savings than we had anticipated.

As a result, the Navy analyzed a series of pricing alternatives placing the ships in different years using various strategies. During the budget preparation process in the fall of 1986, the FY 90/93 acquisition strategy was approved and incorporated into the FY 88/89 budget submission. This strategy was predicated on further refining the success we are experiencing with the FY 83 carrier acquisition.

The examination of that FY 83 program indicated that a key factor in the savings was the lower unit cost of material purchased in economic order quantities and heel-to-toe production. These savings were directly related to the successful implementation of the FY 83 acquisition strategy. By accelerating the planned procurement of CVN's, the Navy will help stabilize the industrial base for its major equipment suppliers. For example, prior to the decision to accelerate carrier procurement, the workload at the major Naval nuclear suppliers was expected to drop to less than 50 percent of their current capacity. The inclusion of additional carrier work would fill in the gap through the end of the decade. We also looked at the startup costs and loss of productivity that result from the "manning trough" that results from not maintaining a heel-to-toe carrier production. Those costs totaled about $700 million or 23 percent of the $3 billion difference between the $10 billion EPA budget and the present $6.966 billion budget. Another consideration was capturing the benefit of the low inflation being experienced in the current economy.

It was only after an assessment of deferring production, various acquisition alternatives and the FY 83 acquisition's success that the decision was made to place the carriers in the current FYDP. This was not a decision arrived at behind closed doors in the eleventh hour. Rather, it was a result of a year long appraisal of the most cost effective options available to build replacement carriers.

QUESTION OF PRIORITIES

Senator KENNEDY. You know, we are looking at the questions of priorities, clearly, in terms of the total budget. Admiral Crowe gives first priority to sustainability, modern munitions, ASW, SSN programs. But evidently you have a different priority.

Should we continue to shortchange the spare parts and munitions to pay for the new carriers? I understand, compared to the projections in the 1987 budget, the Navy actuals, fiscal year funding request for spares and ammunition are down. The spare parts are down 16 percent, ammunition and tactical missiles 14, support equipment 37.

And another area of very considerable concern to me is the impact that we are having in terms of the conditions of fighting men and women. Pilots that would fly off the new carrier are leaving the service because of the inadequate pay and benefits.

Military pay now lags 9.4 percent behind private sector. Housing allowances are inadequate. Housing itself is unavailable and unsatisfactory.

And given both what Admiral Crowe has stated and what the budget request reflects in terms of the spare parts, ammunition, tactical, support equipment, given the increasing pressures on pilots, particularly Navy pilots, the other questions on housing allowances, moving allowances, at-sea pay—how do we really justify that we are going to get the maximum defense dollar expenditure the way that you have recommended here this afternoon in terms of front-loading the commitment to the purchase of these new carriers?

Secretary **LEHMAN**. Mr. Chairman, I have discussed all through this process the carrier budget request with Admiral Crowe, and I am unaware of any differences in perspective of priorities with Admiral Crowe, either before or after the Secretary of Defense's decision to ask for it. His memorandum on his priorities took for granted the continuance of 15 carriers, and nowhere has he ever suggested that we should drop below 15 carriers.

The issue of whether we are doing this at the expense of readiness and sustainability I think is very clearly demonstrably not true, that we are shorting either readiness or sustainability. We are very proud that this year will be the first year in history, the history of the United States of America, that every Navy carrier will deploy with 90 days of spare parts at a war-fighting sustainability rate. That ain't bad for Government work.

We have achieved that not just by heaving money at it, but by totally reforming and bringing competition into the way we buy the spare parts and putting discipline into that program.

We have achieved a full wartime requirement of 90 day spares on every carrier. For the first time in history, we will have full yellow gear and full support equipment for carriers, every carrier, indeed all 15 of the carriers when the fifteenth is delivered.

In ammunition, we have continued to fill and steadily increase the numbers of weapons types and the amounts of weapons from where we were six years ago. Six years ago we had less than a week's supply of ammunition in the key defensive and offensive weapons systems. In those days, you will recall so well all of the publicity about having to hot-deck, cross-deck the Harpoons and the Sparrows and the Sidewinders as one carrier would leave the Med and give them to the carrier coming in.

Today every carrier that leaves Norfolk or leaves any of the home ports leaves with a 100 percent ship fill of every one of the latest weapons which you saw used so well in the Gulf of Sidra and in Libya last year. They had the latest AIM-9M's, not old AIM-9's. They had the latest AIM-7F's, the latest Harpoons, the latest jamming gear, the latest chaff.

All of that is about at the level where—well, it has broken every record we have ever kept. I mean, we are at average 89 percent aircraft mission capable for the forward deployed carriers. Six years ago we were at 62 percent.

So surely it is clear we have not shorted readiness and sustainability to fund these.

Senator **KENNEDY**. My time is up. I find it difficult to be able to read just the first paragraph of Admiral Crowe's memo where he says:

> I have examined Secretary Lehman's proposal to accelerate aircraft carrier, and I agree that the earlier two-ship procurement could pay dividends for carrier modernization. From the pure business standpoint, the proposal appears sound. However, it would be very difficult to accommodate the early funding given our current fiscal limitations.

And then the rest of the document points out, I think very clearly, when he talks about modern munitions, ASW, and the SSN program. I think it is difficult to read that memorandum and not feel that he himself would come out in support of giving a higher priority in those areas.

Secretary **Lehman**. Mr. Chairman, your newly strengthened and independent Chairman testified before your full committee to the contrary, that he fully supports it. And indeed, I could not have put it better when he said: Far better to have the proper number of carriers in the right place with only 25 aircraft than have 3,000 aircraft sitting back in the United States.

Senator **Kennedy**. Well, I pointed out in the earlier committee, given his memoranda prior to the time that the institutional change was made and after the institutional change was made, it seems to me that the more authentic document was prior to the time. When he was expressing himself as a former head of the Pacific Fleet and a four-star Navy Admiral, if we are looking at what would be a more clear indication of a true position, and I think everyone around here understands that.

My time is up. Senator Warner.

Senator **Warner**. Thank you, Mr. Chairman.

Mr. Chairman, I wonder if we could have unanimous consent to put at this point in the record——

Senator **Kennedy**. It is so ordered.

Senator **Warner** [continuing]. The actual testimony before the Armed Services Committee to which the Secretary directs attention, when Admiral Crowe made that statement about the 25 planes 50 miles away are a lot better than 500 planes 2,000 miles away.

[The material referred to follows:]

Senator **Warner**. Admiral Crowe, I think that we have skirted the issue of naval forces here and I want to come directly to the major issue in the President's budget. That is, replacing these two carriers.

You start out by saying that when you joined the Navy it was "our ocean" and now you stated that the Soviet Union is on the high seas, the seven seas, in forces comparable in many ways to ours. They are actively building the large carrier, not by our standards but certainly large by many standards. What is the impact on our strategy if we were to drop from a 15-carrier level to something less, say to 13, bearing in mind that the carriers raised by the President in this budget are replacements, not additions.

Admiral **Crowe**. Well, it would considerably reduce our ability to do the kinds of things, for example, we have had to do in the last year, Senator, and reduce our ability to—I find it a little curious, some of the criticisms of the carrier in a period and an era when we are at the same time stressing subversion, terrorism, limited intensive conflict, our ability to project influence, to move around the world and act in remote locations.

Senator **Warner**. Might I add that the shift in strategy by the Soviets to consider the conventional option more strongly than the nuclear.

Admiral **Crowe**. That is correct, and of course the carrier plays a heavy role in this. I think the military case for the carrier I think is indisputable. It does not solve all your military problems, but it does a number of things for you.

Number one, it has got a wide breadth of usage in all the kinds of warfare that we have to be prepared to deal with, all the way from nuclear war to conventional major hostilities, through limited conflicts right down to limited intensity conflicts. The carrier has a role. It has the tremendous advantage of flexibility and mobility. Of course it does not carry 500 planes to the scene of a crisis, but sometimes 25 planes 50 miles away are a lot better than 500 planes 2000 miles away.

These are, in this day and age, tremendous advantages. As long as I have been connected with the JCS, which now comes to about 20-some years, the first question that is asked in every crisis is where are our carriers?

Senator **Warner**. Where are our carriers. Yes, I know.

Admiral **Crowe**. Carriers are not invulnerable. Carriers can be sunk. Land bases can be destroyed. I was in Vietnam. We lost 400 planes on the ground in Vietnam and some 4000 damaged in the course of that conflict from ground action in Vietnam. We did not lose any planes on carriers to ground action.

So that the various alternatives have pros, cons, and so forth.

Senator **WARNER**. Mr. Secretary, first, you gave an excellent overview of the national strategy by way of introductory remarks to this presentation by Admiral Mustin which likewise improved like red wine through the years. I have heard this carrier debate since 1969.

And in that context, I say to my good friend, I recognized when I was Secretary of the Navy that I did close the Boston Quincy Shipyard. You have been telling me all through the hearing about it. With your support on carriers, we might revisit that and open it up. [Laughter.]

Mr. Secretary, back again to naval history. We had quite a discussion on strategy and history in here. You know full well—and we are not at liberty to disclose all the facts in this open hearing, but the Soviet Union recognized the intrinsic value of the large deck carrier, and Admiral Gorshkov as his final act as chief of their navy directed the beginning of the construction of those large decks.

SOVIET PROGRAM

Tell us what you can about the Soviet program, and why they are moving in that direction when they are able to reach their principal allies by a road system, in sharp contrast to the United States that has its forces forward deployed with our allies?

Secretary **LEHMAN**. Senator, as you well know, air power is essential, air superiority 24 hours a day, over an area of the sea that is of issue, of vital interest. The Soviets do not have that air superiority except very close in to their shores.

Air superiority is not being able to put an aircraft over a given spot. It is keeping available sufficient war-fighting capability 24 hours a day, and that cannot be done from land bases. They recognize that. They recognize that we have great confidence we will be able to clean up their surface fleet in time of combat because they lack, among other things, that air superiority.

They are moving to redress that balance. They are building big rather than small carriers for the common sense reasons. As we look at it, this complicates our lives. We frankly do not know how to sink the ship that they just launched.

It is 75,000 tons, multiple hulled. They stole a lot of the technology from us on how to build it.

Senator **WARNER**. This is a carrier you are talking about?

Secretary **LEHMAN**. Yes, a super-carrier; a 75,000 ton super-carrier. And they have laid the keel for another one, and we expect more seriatim.

Now, we will not have to deal with major large carrier presence in the Soviet fleet until the next century at the rate they are building. They understand why those carriers are essential, because they are the inestimable air superiority that they lack today and can never have from land bases.

So they have built them big because they have seen, as we have all seen. More than 100 ships have been hit by Exocet cruise missiles and other anti-ship cruise missiles in the Persian Gulf, and only one has been sunk, one of the large tankers, because big ships do not get sunk by little missiles.

Other than all-out thermonuclear war which is a separate issue, the threat today is actually less than it used to be, because the high tech missiles are smaller, with smaller warheads. When they hit, they do less damage.

Senator WARNER. One last question, Mr. Secretary. The President, indeed all of us, are trying to move toward a world with fewer nuclear weapons and less reliance on that hair-trigger threshold of the need to use them. As we move in that direction, we know full well that we have got to shore up not only the United States forces, but our allies' conventional power.

We talked about a carrier in many roles, but indeed it has an enhanced role now in conventional deterrence, and particularly with the rise in terrorism, small pockets of confrontation in remote parts of the world, and the like.

Would you address the role of the carrier as we turn, hopefully, from less reliance on nuclear forces to conventional forces?

Secretary LEHMAN. Senator, I fully agree and the President has stated it very well, a nuclear war cannot be won and must never be fought. Unfortunately, that opens up a much broader spectrum of potential conflict below the nuclear threshold, all the way from individual acts of terrorism to large-scale conventional war.

It is the carrier that brings the capability unique to every aspect of that spectrum of potential violence, and hence deters it. Whether it is the intercept of pirates from the *Achille Lauro,* encountering terrorism, or supporting NATO on the flanks in providing the only real air superiority in the extreme flanks of NATO, it is the carrier that can tailor its air wing to meet that threat.

As you recall, in 1970 when you were in the Navy Department you had the air wings of four carriers tailored to carry nothing but air superiority fighters. You put the attack aircraft off in Spain and loaded it with the Phantoms, because that is what Jordan needed, since we were providing air superiority to Jordan.

If we were to provide a deep strike capability we would off-load other anti-submarine and load 60 or 70 attack aircraft per carrier. So the flexibility of these ships is what makes them so uniquely capable, from the individual *Achille Lauro* kind of deterrence that will become more and more the threat in state-sponsored terrorism to the extent we succeed in stabilizing the nuclear balance, and at every level in between of deterring the disturbers of the peace, whether they are Soviets or mavericks.

Senator WARNER. And in this changing world, the rising level of threat from those problems even puts a larger requirement on the need for our carriers?

Secretary LEHMAN. Absolutely.

Senator WARNER. I thank the Secretary.

Thank you, Mr. Chairman.

Senator KENNEDY. Senator Levin.

Senator LEVIN. Thank you.

I welcome both of you. In your 1987 annual statement, at least in the DOD's annual statement, the following statement was made:

The Navy will not need to procure any more new carriers until the early 1990's. At that time, to sustain a force of 15 deployable carriers we may need to start a program to replace the carriers now undergoing service life extension.

In the DOD's 1988 annual report to Congress just a few months ago, the DOD said that the Navy will have to order replacement for some of its other carriers in the early nineties if it is to sustain a force of 15 into the next century.

Were those statements true, that we can sustain a force of 15 carriers by ordering these two carriers in the early nineties instead of now, except it would obviously cost us more to order them in the nineties instead of now?

Secretary LEHMAN. That is true, Senator. There has been a new assessment that I would add. We carried the *Midway* in that plan, retiring in the year 2000. Starting last summer, we began to see that we had troubles with the blister that we put on the *Midway* and we are not going to be able to get the kind of performance out of *Midway* because the blister has not worked out as we had hoped.

We had planned that blister for all of the *Forrestal* class that were to be replaced including the ones that are being SLEP'ed right now. In relooking at it, we had about $300 million per ship for the SLEP program for the blister and side protection. When we analyzed the cost effectiveness we saw it really makes more sense, given how much we can save by repeating what we did with *Abraham Lincoln* and *George Washington,* not to put those blisters on the *Forrestal* class, but instead to retire them at 45 years, not make that extra investment in them, and instead buy new carriers. That is essentially why we changed from last year to this.

Senator LEVIN. What month was that?

Secretary LEHMAN. I think I went to the Secretary of Defense—I would have to check my records—some time in late September with the new data and the estimates.

Senator LEVIN. No, I am talking about—what you just talked about was last summer, as I understood you.

Secretary LEHMAN. Yes, starting last summer we started to get nervous about the blister program.

Senator LEVIN. But is my statement basically correct?

Secretary LEHMAN. Your statement is correct. We could keep the carriers going and defer until 1991, 1992, as we had originally planned.

Senator LEVIN. And still maintain the 15 carriers?

Secretary LEHMAN. Yes.

Senator LEVIN. So the issue is not whether we have a 13-carrier or a 15-carrier Navy. The issue is when do we purchase those two new carriers.

Secretary LEHMAN. I think that that is the proper issue.

Senator LEVIN. Now, on that issue, it is obviously true you save money if you buy earlier rather than later. Obviously you save money if you buy in quantity. As a matter of fact, when you wanted to buy two new carriers last time you listed $400 million in savings, saying that you saved $200 million a carrier—that was your original estimate—if you bought two at a time.

Secretary LEHMAN. We learn from experience.

Senator LEVIN. I came back saying, why do you not buy ten and we could balance the budget?

There is major cost to these carriers. You can save some when you buy two instead of one, but you are still laying out $7 billion now instead of $8 billion in constant dollars later, or whatever that figure is. Is that not correct?

Secretary Lehman. Yes, that is true. But I think that the real savings that we have achieved on the two carriers, if you audit——

Senator Levin. The GAO will give us that audit.

Secretary Lehman. Whatever it is, that figure is what you save by buying two at a time.

Senator Levin. Whatever the GAO tells us, I do not doubt it. Buying in quantity is not the issue. The issue is what are we cutting this year to accelerate the purchase of these carriers earlier than the plans called for just three months ago? I mean, we got a document from you just three months ago, from DOD, showing as of September of last year: "U.S. naval ship building program, carriers: 1988, zero; 1989, zero; 1990, zero."

But the question is whether we accelerate the purchase. Obviously we are going to save some money, and then the question becomes one of stretchouts of other programs, of whether we are not going to adequately fund munitions, of the kind of maintenance that we ought to have in our depots for all of our equipment. What are we going to lose?

That is the kind of weighing that we have got to do. What did you cut out of your budget to fund these carriers? What are you not buying in terms of aircraft or other things in order to put $7 billion in over the next few years for these two carriers?

Secretary Lehman. Let me run through some of the things that we are not buying. We have about $200 million of fuel cores that we will have to buy to keep the production going of nuclear cores. That would go into spares, wartime spares. We now can use that $200 million. We will have to spend that $200 million or else shut down the——

Senator Levin. Because I am short of time, would you give us the list of the things that you are not buying in order to buy the carriers, for the record?

Secretary Lehman. Yes, sure. I will be happy to submit that to you.

[The information follows:]

Funds for Replacement Carriers

Most of the funds for the two replacement CVNs came from making adjustments to the shipbuilding program. The rest came from a re-examination of our requirements for incrementally funded modernization efforts and by not buying certain modernization/investment items because the requirement was no longer there.

Senator Levin. One last question. You are candid here basically in saying: Look, you changed your program because we are basically going to save some money by buying them now and buying two at a time. I think that is candid. I do not agree with your priorities, but it is straightforward.

We had the Secretary of Defense here, who absolutely denied there was any change in plans. And for the life of me, I cannot figure out why. But he tried to persuade this committee: I do not concede a change or anything of the kind in the area of the carriers.

And that is just plain baloney. There is a change, and the question is whether it makes sense, business sense.

Secretary LEHMAN. In his mind, he never has seen a change in the requirement for the 15 carriers.

Senator LEVIN. No, as to whether we buy now. We all agree on the 15 carriers. The change that he denied was that we are going to buy them now. He denied that there was any change in buying them in 1988 and 1989.

Secretary LEHMAN. I think there was some confusion. Let me try to straighten that out, because in the initial Navy submission a year ago we did have the first of the two carriers long lead funding in 1992. So from the very first, he had in his mind that the Navy was asking for carriers.

We moved it up. I recommended to him we move it up 4 years.

Senator LEVIN. That was the question that he was addressing, whether we have moved up this buy. He said he does not concede any change in that. And I am glad you are being straightforward. Frankly, he was not straightforward with this committee, although pressed on this very issue.

I think it is a good business question, and you have to look at the other priorities and the other cuts and other stretchouts and other losses when you want to spend this money now. That is a very important priority issue. That is the one we ought to face, and not pretend the issue is do we have 13 carriers or 15 carriers. That is not the issue.

Thank you.

Secretary LEHMAN. I agree.

Senator KENNEDY. Senator Exon.

Senator EXON. Mr. Chairman, thank you very much.

Mr. Secretary, we are delighted to have you here. Thanks for coming over. You are doing a good job in defining your rationale for these two additional carriers.

And I hear the term "15 carriers" bandied about all the time. I think maybe we ought to get the record straight. It is the Navy's plan, is it not, to have a total of 16 carriers, 15 operational and one in SLEP?

Secretary LEHMAN. Yes, sir.

Senator EXON. So if this program you have recommended to us is adopted, we are not going to have 15 carriers; we will have 15 carrier groups, but we will have 16 carriers, is that correct?

Secretary LEHMAN. That is correct.

Senator EXON. We will have 16 carriers under your plan, 15 operational and one in SLEP?

Secretary LEHMAN. Fifteen deployable is the term we have always used.

Senator EXON. I guess that that should be made clear.

Now, if I understand it correctly, when these two carriers are purchased and put on line, by that time or simultaneously with that second carrier, we would have retired the *Midway*, the *Coral Sea*, and one of the *Forrestal* class, is that correct?

Secretary LEHMAN. Yes, sir.

Senator EXON. So if my faulty arithmetic is correct, we have 15 now, we have two under construction. We will have two new ones, for a total of 19, less the *Coral* and the *Midway* and one of the *Forrestal* class.

Secretary LEHMAN. That is correct.

Senator EXON. Now, supposing that we did not authorize these two additional carriers. I am not predicting what is going to happen and I have not decided how my vote will go on this. But supposing that would happen, that we would not buy these 2 ships. I imagine it would be expensive to patch up, fix up, refit the *Midway* and the *Coral Sea*. Granted, that would be expensive.

But I assume that those carriers could go through a process to where they could still fit into your overall plan and still do a job, but not as well as you think it should be done. Is that a fair assessment of the situation?

Secretary LEHMAN. I think there is no absolute on any of them. But I would say that it is much more feasible on the *Forrestal* class to extend them beyond their 45 years life than it is of *Coral Sea*.

Based on the experience we had with *Coral Sea* on a deployment last year, she requires about 600 people in her machinery spaces. That ship has been run hard and put away wet for many years. *Midway* got better treatment because of her cycle. It just is becoming increasingly difficult to keep that ship going in a cost effective way. That is why we are now pretty much sure we are not going to use her for the training carrier. Our original plan was to retire *Lexington* as the training deck and strip down *Coral Sea* in 1991 and use her for the training carrier.

Now everybody believes that she is really too clapped out. The amount of money you would have to put in to really keep her, even as a training carrier, beyond 1991 would not be cost effective.

The *Forrestal* class carriers are bigger. They have got more volume, they have got better side protection against cruise missiles and torpedoes. Here you can make a better case for making a very major investment to keep them going. Yes, I would say you could extend those beyond 45 years, but the amount of money you would have to put in just does not look practical compared to what you give up in capability and in survivability and in maintainability by building a new ship.

Senator EXON. All right. Let me ask a question on priorities. You know, I think you have been a great Secretary of the Navy. I have told you that personally and I have said that publicly. We have not agreed on some things, such as homeporting, and we have not agreed on battleship reactivations.

Secretary LEHMAN. I told you, the issue of a homeport in Omaha is still open.

Senator EXON. But you have been a great advocate for the Navy, and I think the record will show that you were a great Secretary of the Navy.

I am not trying to put you on the spot, but we have to sit here and make hard decisions. You propose and we dispose, and it is not very easy up here sometimes, especially when the administration backs such things as Gramm-Rudman-Hollings and all of those wonderful things that are going to balance the budget.

But if you really understand all these programs we have got coming down the pike, you will see that we have a very, very serious funding problem, and that the bow wave that the GAO has told us about is going to hit us in 1991-1992.

Let me ask you this question. If you were on this side of the table rather than on that side and you had to make a decision as to whether to delay or stretch out or maybe cancel one of the Trident D5 submarines so that we could go ahead with this ship building plan for carriers, would you do that?

Secretary **Lehman**. Senator, like Senator Warner I had my first real great debate on the carriers on what is now the *Carl Vinson* when I worked for Henry Kissinger back in 1970. Then I went through the debate on the *Teddy Roosevelt*, CVN-71. Then I went through the debate on *Abraham Lincoln* and *George Washington*. Now I am going through this debate.

I think there are a lot of really interesting, exciting issues today in defense. This to me is one of the most boring intellectual dejá vu issues that I can think of. If I could have avoided this debate in my sunset year in this job, you may believe I would have done so.

Had it been prudent to leave the carrier as we had it a year ago, that is what I would have done, because I just do not find this debate enticing, and I am sure you feel the same way. It is just not that intellectually exciting.

We did it because we did have to make those hard choices. We are not living in a dream world. We have to live with the CINC's and service what they are laying on us to supply them. We see that this is hardly a bull market for defense up here, and you have realities you have to live with.

So we know we have to batten down the hatches and prepare ourselves for a very difficult and austere environment. We also have been through living with what was done through three administrations in the late sixties and seventies, in living off capital and living for the here and now to meet operational requirements of Vietnam and not investing in the future. That is why we do not have a 600 ship Navy and why this President never had an option ever to have a 600 ship Navy.

We honestly believe that the best expenditure of our money is to keep that industrial base stable and competitive, and to keep the ships newer. If we have to live with a smaller fleet in the future, far better to have newer ships that are easier to maintain, to take advantage of the reduction in manpower that new technology gives us, than keep older ships, which admittedly can still be kept running, like my 20 year old Corvette.

So if I were on your side of the table. I would be just as strongly for it as I am on this side.

Senator **Exon**. Mr. Chairman, there is some talk that the distinguished Secretary may run for the United States Senate. He is expert at filibustering and he has not answered my question.

You obviously do not care to answer my question, is that right? You do remember what my question was, do you not, Mr. Secretary?

Secretary **Lehman**. No, but I have another point I would like to make.

Senator **Exon**. My time is up, Mr. Chairman. I just wanted to give you a chance, in a few words if you can, to answer what we heard from the previous panel, that an aircraft carrier sitting outside of the gulf does not have to be there, that we have other means that we could handle that with.

I assume that you do not agree with that. Could you give us a very short recitation of why you think that is necessary? I happen to feel that it is.

Secretary LEHMAN. You know, each carrier brings with it the equivalent of 200 B-17 strikes each day in strike. That is just with the minimum load of attack aircraft. It brings 24 hour a day air superiority. It brings long range intercept and interdiction, and anti-submarine warfare.

But of course I think that that is enormous power, and everybody who is in the littoral where a carrier is knows it is really there. Certainly Mr. Qaddafi, moving down into the desert, is well aware of what carriers can do and that is why he has moved.

But that is also irrelevant with regard to the Indian Ocean, because every President since World War II has sent the Navy there. We do not ask to go to the Straits of Hormuz. We are ordered to go there, and that is because every President—liberal, Democrat, conservative, Republican, whatever—has always had to ask, "Where are the carriers?" because the nations there, friend and foe, respond to the presence of that real military capability on scene.

Without question, that is the continuing and will be in the future the way the United States can put real power where its vital interests are concerned.

Senator EXON. Thank you, Mr. Secretary.

Thank you, Mr. Chairman.

Senator KENNEDY. Let me just ask, Admiral Mustin, have you ever met a submariner that did not think he could sink an aircraft carrier?

Admiral MUSTIN. Yes, I have, I have.

Senator KENNEDY. Do you think that most of your submariners believe that they could not sink it?

Admiral MUSTIN. Oh, no, and I hope they feel that way. I have never met a P-3 pilot who did not think he could sink submarines, and I want him to feel that way. I have never met a destroyer sailor who did not think he could shoot down every airplane that came near him, and I want him to think that way.

Senator KENNEDY. Did you ever meet any Navy air pilots that did not think they could sink an aircraft carrier?

Admiral MUSTIN. Yes, I have. I have met a number of them, of all nations.

Senator KENNEDY. I am talking just about ours.

Admiral MUSTIN. Oh, yes. Our own pilots in our own exercises where carriers go against carriers find that it is very difficult to get to an aircraft carrier.

Senator KENNEDY. OK.

Mr. Secretary, thank you very much. You have been very patient with the committee. You gave a very effective presentation for your case.

Secretary LEHMAN. Thank you, Mr. Chairman.

Senator KENNEDY. Admiral, thank you very much.

[Questions for the hearing record with answers supplied, follow:]

QUESTIONS SUBMITTED BY SENATOR CARL LEVIN

POWER PROJECTION OPTIONS

Senator **LEVIN**. Could you please explain in some detail why carrier-based aircraft must be used to carry out the strikes on Soviet naval and naval air facilities which are vital to the United States maintaining control of the seas?

Why, for example, couldn't those strikes be conducted by a combination of submaine and surface launched cruise missiles and Air Force aircraft using stand-off munitions?

Secretary **LEHMAN**. As you clearly realize, in a global conflict with the Soviet Union we must defeat Soviet maritime strength in all its dimensions, including base support. Not just U.S. military planners, but also the major NATO commanders, recognize and endorse this need to be able to attack Soviet naval facilities and airbases.

The actual timing, target prioritization and military forces to use are tactical decisions properly the purview of the theater CINC. Two alternatives to carrier-based aircraft, surface launched cruise missiles and Air Force aircraft using stand-off weapons, require control of the air. Who is going to establish such control? Other than submarine launched SLCMs, carrier tactical airpower may be the only way to carry out these strikes in a hostile environment.

It should be noted that among the factors which would influence the choice of forces to attack Soviet naval bases, geography and allied force disposition may well be deciding factors. Soviet naval bases and naval aviation bases are located on the periphery of the Soviet Union, long distances from planned concentrations of U.S. Air Force strike assets. A decision to use submarine launched or surface launched cruise missiles would obviously be dependent on availability and prioritization of limited TOMAHAWK weapons, proximity of launch platforms to Soviet targets, and military appropriateness of diverting submarine or surface TOMAHAWK platforms from other warfare missions. Similarly, the viability of carrier strikes on any given day will be dependent on location and priority tasking.

In summary, naval forces offer the tactical commander several options including long range carrier air strikes employing stand-off munitions as well as subsurface and surface launched cruise missile attacks. These options can be included in his repertoire of potential strike assets and, because of the mobility and flexibility of carrier battle groups, will likely be CINC's preferred instrument of power projection.

VULNERABILITY OF CARRIERS TO MISSILE ATTACK

Senator **LEVIN**. A good deal of the controversy over large-deck aircraft carriers over the years has focused on the vulnerability of such vessels to attack by multiple high speed cruise missiles launched by subs, ships, and planes.

In Secretary Lehman's testimony today he addressed this question by noting that "If it does get hit, its greater size, greater degree of watertight compartmentation, greater damage control resources, and other survivability features enable it to absorb several such hits under most circumstances and continue to carry out its mission."

My question is, how does the vulnerability of our carriers to conventionally armed missiles differ from their vulnerability to such missiles armed with chemical warheads, nerve gas warheads?

Please note that I am not referring to the vulnerability being hit by such missiles, but rather to the vulnerability of our carriers to the effects of being hit by the two types of missiles.

Secretary **LEHMAN**. Several years ago a study was conducted on the effectiveness of an impacting chemical agent-filled weapon when employed against several types of ships, including carriers. [deleted.] This initial study was conducted to provide a "baseline" of information. It should be emphasized that [deleted]. A follow-on study, which will look at the same types of situations [deleted] is in progress. This study should provide us with a more realistic assessment of the effect that we could expect a chemical weapon would have on a ship. While the CW threat deserves and is getting significant attention, it should be borne in mind that mobile targets at sea are less lucrative CW targets than relatively stationary targets ashore.

Senator **LEVIN**. How would one or two hits by a Soviet chemically armed cruise missile affect the operation of one of our NIMITZ class carriers? Could we expect flight operations to be significantly curtailed or even stopped by such hits? Given the ventilation system on such carriers and the chemical protective equipment on board, what kind of casualty figures could we expect from such hits?

Secretary **Lehman**. There are a number of variables that must be considered when discussing this question. Factors such as weapon type, agent fill, point of impact within the ship, and the Chemical Warfare (CW) countermeasures employed will all directly affect the final outcome. Individual Protective Equipment (IPE) is the key to continuing operations during/after a chemical attack. [Deleted.] In general, casualty production from a CW attack should not be significantly greater than for a conventional attack provided chemical countermeasures are employed. Without these countermeasures in effect, casualty rates might be greater than those experienced from a conventional attack.

WARGAME RESULTS

Senator **Levin**. Everybody in this town knows that in Navy wargames matching subs against carriers, the subs clean up. Is that actually the case?

If not, could you perhaps supply the committee with the relevant data from those wargames and exercises. It seems to be vital to our understanding of the operational realities of all-out naval warfare.

Secretary **Lehman**. Wargames are carefully controlled experiments whose supporting assumptions can, like their purpose, vary widely. In a general sense, wargames are best used to explore new concepts, devise issues for further study, and educate officers on how to approach planning for large scale conflict. Because each game or exercise is only one data point and, at best, only approximates wartime conditions, their results must be interpreted carefully. The data from even a single game, which consists of reams of computer printouts, tapes, and messages, is far too voluminous to provide any insights that have macroscopic application of the type you seek.

However, I can say with total confidence that, over time and across the entire spectrum of games I have observed, we do not see a trend in which CVBGs are subject to unacceptable levels of risk by submarines or any other Soviet platforms. Due to their inherent mobility, sustainability and survivability, the CVBG will remain the centerpiece of our maritime forces well into the 21st century.

Questions Submitted by Senator Pete Wilson

FAST COMBAT SUPPORT SHIP (AOE-6)

Senator **Wilson**. A commitment to maintain a modern 15 carrier battle group Navy implies that the escorts and replenishment ships that are a vital part of the carrier's task force must also be kept modern. Last year, despite tight funding constraints, we were able to find funding for the AOE-6 Fast Combat Support Ship which is the most cost effective means of underway replenishment for our carrier battle group. $499 million was approved, well below the Navy's $613 million request. Were you able to execute the shipyard contract at this funding level?

Secretary **Lehman**. Yes, we were able to do this.

FAST COMBAT SUPPORT SHIP (AOE-6)

Senator **Wilson**. I understand that during the design of this AOE-6, affordability was a prime consideration and that one cargo hold and associated cargo handling equipment was eliminated from the initial design in order to save cost. This ship is now smaller than the AOE-1 Class and the cubics of certain cargoes carried have increased. I would like to avoid another AO-177 jumboization type project, if possible, for these ships in the future. The yard is just beginning detail design. Does adequate funding exist to restore this cargo hold with its associated cargo gear and provide the fleet a ship which will better meet our warfighting needs into the next century?

Secretary **Lehman**. No. There are no "surplus" funds to accommodate the proposed ship lengthening. Further, there would be significant program delay and disruption, and the contract would have to be renegotiated with the high probability of a slip in the present contract delivery date of the lead ship.

[Whereupon, at 5:47 p.m., the subcommittees were adjourned.]

DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEARS 1988 AND 1989

TUESDAY, MARCH 24, 1987

U.S. SENATE, SUBCOMMITTEE ON CONVENTIONAL FORCES AND ALLIANCES DEFENSE, SUBCOMMITTEE ON PROJECTION FORCES AND REGIONAL DEFENSE, COMMITTEE ON ARMED SERVICES,

Washington, DC.

SSN-21 SUBMARINE

The subcommittees met jointly in open session, pursuant to notice, at 10:03 a.m., in room SR-222, Russell Senate Office Building, Senator Edward M. Kennedy and Senator Carl Levin (chairmen) presiding.

Present from the Subcommittee on Conventional Forces and Alliance Defense: Senators Levin (chairman), Dixon, Shelby, Quayle, Thurmond, Cohen, Gramm, and Warner.

Present from the Subcommittee on Projection Forces and Regional Defense: Senators Kennedy (chairman), Stennis, Exon, Shelby, Cohen, McCain, and Warner.

Staff present: Arnold L. Punaro, staff director; Carl M. Smith, staff director for the minority; Romie L. Brownlee, deputy minority staff director; John J. Hamre, George K. Johnson, Jr., Ronald P. Kelly, James R. Locher III, Norman G. Mosher, Gordon G. Riggle, and Mark B. Robinson, professional staff members; Russell C. Miller, research assistant; and Lori M. Jackson, staff assistant.

Also present: Greg Weaver, assistant to Senator Levin; Gregory B. Craig and William J. Lynn, assistants to Senator Kennedy; Jeffrey B. Subko, assistant to Senator Exon; Charles C. Smith, assistant to Senator Dixon; Leon Fuerth, assistant to Senator Gore; Terrence Lynch, assistant to Senator Shelby; William J. Wight, assistant to Senator Warner; Dale F. Gerry, assistant to Senator Cohen; Henry D. Sokolski, assistant to Senator Quayle; Jay L. Kriss, assistant to Senator Wilson; Alan Ptak, assistant to Senator Gramm; and Samuel J. Routson, assistant to Senator Symms.

OPENING STATEMENT OF SENATOR EDWARD M. KENNEDY, CHAIRMAN

Senator KENNEDY. We will come to order.

The hearing will focus on the SSN-21 nuclear attack submarine, the *Seawolf*. In the 1987 budget, Congress provided long-lead item funding for this submarine. For 1988 the Navy's request is for a continued procurement of long-lead items. For 1989, full funding is requested for the lead ship *Seawolf,* along with development of the combat system for the submarine, the attack submarine force, an essential component of the U.S. conventional deterrent force.

Given our reliance on the maritime resupply of Europe, it is vital to maintain our edge in submarine warfare. Over the past decade the Soviet Union has made significant advances in antisubmarine warfare. They have succeeded in making their own submarines hard to detect. They have improved their ability to detect our submarines.

Accordingly, the one substantial U.S. advantage in antisubmarine warfare has eroded. This trend is cause for concern because if we cannot hope to compete with the Soviets in numbers of submarines, it is imperative that we maintain a qualitative advantage. Thus, there is a strong argument that a new attack submarine is needed and justified. By 1995 when the first SSN-21 would join the fleet, our current design will be 19 years old. Although the 688 is a fine submarine and the current version represents a substantial advantage in capability, there is no margin left for further improvement.

The SSN-21 will be an important element in retaining U.S. submarine superiority into the next century. The question is whether the SSN-21 is ready for full funding in 1989. The central issue is whether its technologies, including the combat system, will be ready to go to sea in 1995.

To address this issue today we have expert witnesses from the Navy and the GAO. Adm. Bruce DeMars is the Deputy Chief of Naval Operations for Submarine Warfare and has overall responsibility for the submarine programs. We are delighted to welcome him here. He has been good enough to spend some time with me before this hearing in speaking about the issues, which I found very valuable.

Adm. Kinnaird McKee is the director of the Naval Nuclear Propulsion Program and is responsible for the nuclear plants in these ships, with the exception of design, through disposal at the end of their useful life.

Also testifying from the General Accounting Office, National Security and International Affairs Division will be John Landicho. Is that the right pronunciation?

Mr. LANDICHO. Yes, Senator.

Senator KENNEDY. Thank you very much.

Frederick Bigden and Ralph Tavares.

We will hear from Admiral DeMars first, and then from GAO, and then have a closed session to hear again from the Navy.

I would ask if any of our other Senators—Senator Warner, do you have any comments that you would like to make?

Senator WARNER. Thank you, Mr. Chairman.

It seems to me the issue some time back was whether to authorize the first long-lead funding for the new submarine. The case for going ahead promptly with the 21 was compelling, and support for long-lead funding was unanimous.

This year the issue is how to get the *Seawolf*'s superior capability to the fleet in a timely and cost-effective fashion in that regard. I would just ask that the balance of these remarks which were to be delivered by Mr. Cohen be included in the record.

Senator **Kennedy**. They will be so included.

Senator **Dixon**. I would like to submit my opening statement for the record.

Senator **Kennedy**. I also have a prepared statement by Senator Levin that will be entered into the record.

[The prepared statements of Senators Levin, Dixon, and Cohen follow:]

Prepared Statement by Senator Levin

Good morning. I would like to welcome our distinguished witnesses, Admiral McKee and Admiral DeMars representing the Navy submarine community and from the General Accounting Office, Mr. Landicho, Mr. Bigden, and Mr. Tavares.

We all know that the issue this morning is not whether the Navy needs a new submarine. We went over that ground last year, and concluded that Soviet improvements in antisubmarine warfare—particularly with newer and more capable submarines—necessitate improvements in our own capabilities beyond that which can be accomplished using our existing submarine hull designs.

The issue this year is one of timing—schedules and dollars are very important in the SSN-21 program this year. For all intents and purposes, this program is a new start this year with procurement dollars in this two year budget cycle of about $1.7 billion for the lead unit of the submarine. There are apparently some critics who say that the submarine should be delayed a year or more because of technical difficulties with the combat system. We look forward to the expert testimony from our distinguished witnesses today to explore some of these issues.

If there are valid reasons why we might want to delay this new start this year, we could save a substantial amount of money in budget authority this year and next, although with very little outlay savings, however.

There is also, again, the question of the threat facing our Naval forces and whether we can afford any delay in this program, given that we have not built a newly designed submarine from the keel up in almost twenty years.

Mr. Chairman, I once again welcome our distinguished witnesses and look forward to their expert testimony.

Thank you.

Prepared Statement by Senator Alan J. Dixon

Mr. Chairman, today's hearing is on the new SSN-21 (*Seawolf*) attack submarine program which is designed to counter Soviet submarine capability advances.

The SSN-21 submarine's mission will include antisubmarine and antisurface ship warfare as well as strike warfare, surveillance and mine warfare. The Navy claims that their current *Los Angeles* class submarines can't meet the expanded mission for attack submarines. The cost of these new SSN-21's will be approximately $1.6 billion for the first ship with a Navy imposed cost cap of $1 billion per ship by the fifth submarine. However, this imposed cost cap is nearly double the current price of a *Los Angeles* class submarine.

Mr. Chairman, the question we must ask is: In an austere budget period can we afford the new SSN-21's?

Thank you, Mr. Chairman.

Prepared Statement by Senator William S. Cohen

This morning's hearing is the latest in a series of hearings which over the years have examined the need for a new attack submarine. Last year, for example, the Sea Power and Force Projection Subcommittee dedicated an entire hearing to the SSN-21 *Seawolf* submarine. We heard witnesses from the Congressional Research Service, the General Accounting Office, DOD's Product Engineering Services Office, and the Navy.

The issue then was whether to authorize the first long lead funding for the new submarine. The case for going ahead promptly with the SSN-21 was compelling and support for long lead funding was unanimous.

This year the issue is how to get the *Seawolf*'s superior capability to the fleet in a timely and cost effective fashion. In that regard, I would like to remind my colleagues of three important points which Mr. Ron O'Rourke of the Congressional Research Service made in his testimony last year.

First, Mr. O'Rourke pointed out that near term delays will have lasting consequences. If we delay construction of the SSN-21, then we must live with the consequences of such a decision for decades. The total capability of our submarine fleet will be permanently diminished if we postpone, even temporarily, introduction of the *Seawolf.*

Second, delay or cancellation of the SSN-21 would both increase military risk and decrease the United States margin of submarine superiority. Submarine superiority is critical to our Nation security and a new, more capable submarine is vital to maintaining that edge.

Finally, substituting a cheaper, less capable submarine for the SSN-21 is the least attractive option in terms of military risk. Faced with dramatic improvements in the quality of Soviet submarines, we must have the best submarine American ingenuity can produce.

I would like to join the chairman in welcoming our witnesses this morning. I look forward to their testimony concerning recent progress in this very important program.

Senator WARNER. Thank you, Mr. Chairman.

Senator KENNEDY. Our distinguished Senator from Mississippi.

Senator STENNIS. Mr. Chairman, I thank you.

I am delighted to be here. I thank you for taking the time to hold these hearings.

Senator KENNEDY. Thank you, very much.

Admiral DeMars, we look forward to your testimony.

STATEMENT OF VICE ADM. BRUCE DeMARS, U.S. NAVY DEPUTY CHIEF OF NAVAL OPERATIONS FOR SUBMARINE WARFARE

Admiral DEMARS. Thank you, Mr. Chairman.

I would like to submit a statement for the record for your consideration.

Senator WARNER. If I might ask a question, Mr. Chairman, as I understand there appears to be a view that perhaps the electronics will not be able in a timely fashion to match up with the speed at which full design and propulsion will be. Are you going to incorporate, so to speak, in your opening remarks here the rebuttal to that?

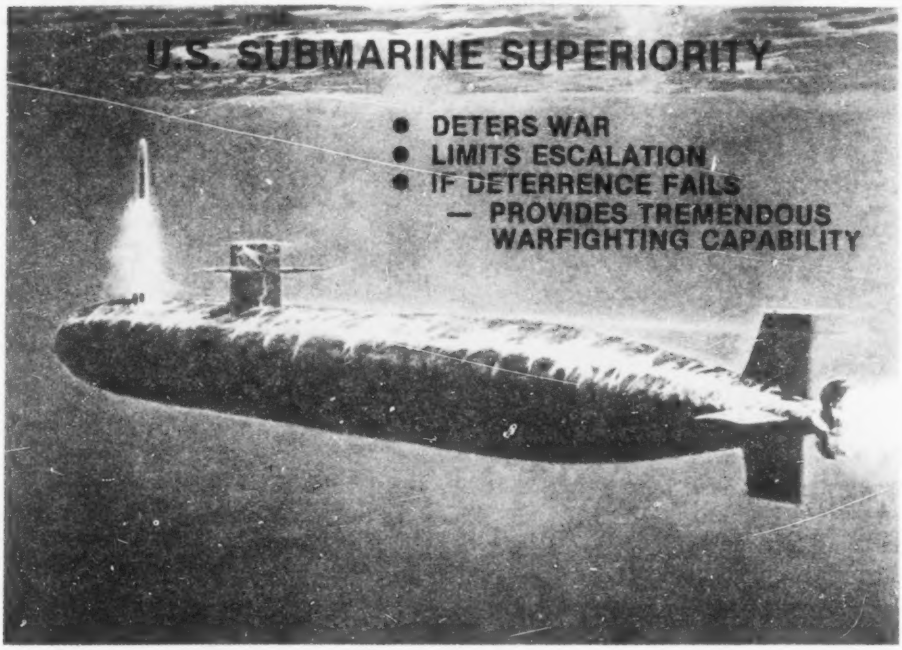
Admiral DEMARS. Yes, sir. I think there are two key questions which we need to come to grips with today. One is that, and the other is the overall question of affordability. I hope to, in a very brief 15 mintues, cover both of those and then go into more detail in closed session.

Senator WARNER. I thank the chairman for allowing me to frame that.

ISLAND NATION

MARITIME POWER AND SUBMARINE SUPERIORITY

Admiral DEMARS. I do not have to tell you that this country is an island nation and what that means concerning dependence upon overseas routes and maritime superiority. What I do hope to get across today is that submarine superiority is a key element of maritime superiority and something we have had for many, many years. We have somewhat taken our submarine superiority for granted because we have had a predominance since World War II. It has meant a great deal to this country.



U.S. SUBMARINE SUPERIORITY

- DETERS WAR
- LIMITS ESCALATION
- IF DETERRENCE FAILS
  - — PROVIDES TREMENDOUS WARFIGHTING CAPABILITY

Basically, we deter war—not only with our strategic submarines, but also with a very powerful attack submarine force which acts as a bar to Soviet expansion at sea. Additionally, we play a big part in limiting escalation in the sort of encounters we have had in the last 40 years. Submarines have played in each one of these. We do not go out of our way to get much publicity because our operations are classified; however, we were at Grenada; we were at Libya. And, if deterrence fails, we provide a tremendous war-fighting capability for this country.

I will talk one minute about the strategic submarine force. Although it is not the focus of this discussion, I think it is a key element in the discussion about submarine superiority and affordability.

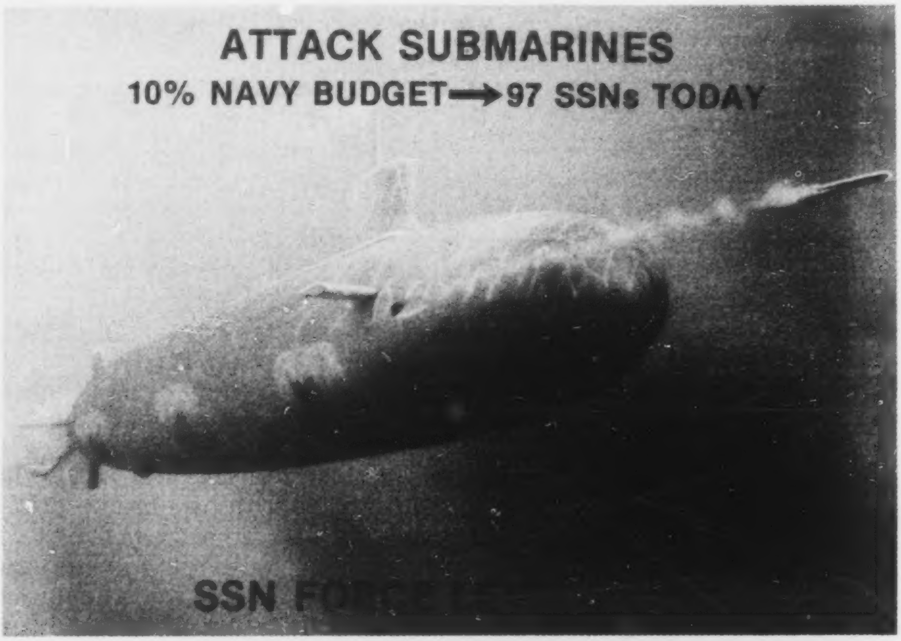
STRATEGIC SUBMARINES

- ABOUT ONE HALF OF THE WARHEADS
  - — 10% NAVY BUDGET
  - — 3% NAVY PERSONNEL
  - — 25% DEFENSE STRATEGIC FUNDING

The Navy is very proud of the strategic submarine force's contribution. We provide half of the ballistic missile warheads that defend our country, with about 10 percent of the Navy's budget, and 3 percent of the Navy's personnel. This amounts to only about 25 percent of the OSD budget for strategic programs, so it is a very, very cost-effective contribution—probably one of the biggest defense bargains this country has ever had.

SURVIVABLE DETERRENT

And of course the strategic submarine force is a very survivable deterrent; 55 percent of that force is always at sea. That provides tremendous crisis stability, because the Soviets are unable to locate and target those submarines, and therefore they know that they will get swift, sure retaliation should they attack the United States.



The attack submarine force is similarly a very cost-effective force. Right now, today, we have 97 SSN's in our attack submarine force. Our force level goal is 100, so essentially, we are at our share of the 600-ship Navy. More importantly, we provide for that 97 SSN force with somewhat less than 10 percent of the Navy's budget. That includes procurement, support, personnel, repair, spare parts, shipyard overhauls and so on. Again, it is a very cost-effective, highly leveraged force.

AGAINST ALL TARGETS

We feel that we have tremendous firepower capability. We can take on all targets at sea, and now with our land-attack cruise missile we have the ability to project power ashore. In order to give a better demonstration of that, I would like you to see a short tape that shows the capability of some of our submarine weapons.

[A videotape is shown.]

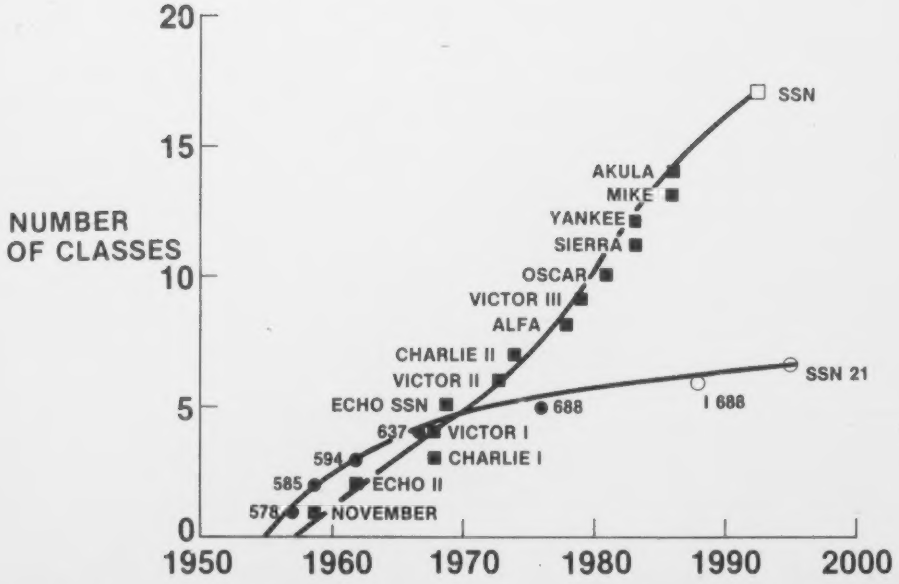
This is a MK–48 torpedo in a test against a surface ship. This is the submarine, the weapon leaving; this is the destroyer escort *Hulk* on the surface. You see the tremedous firepower we can bring to bear. This ship broke up and sank within a matter of minutes.

Our land attack cruise missiles are shown next. This is the Tomahawk Conventional Land Attack Missile shown here exiting the submarine, breaking the surface, and attacking a bunker on San Clemente Island after traveling some 400 miles.

Another version was sent against this aircraft revetment, again after a flight of 400 miles. There is the missile coming in. It blows up and destroys the aircraft. As you can see, we can bring tremendous firepower to bear, if necessary.

ALWAYS OUTNUMBERED

We feel that we always will be outnumbered. In fact, if I can borrow—hopefully not from his remarks today—but some of Admiral McKee's remarks, he generally says that if you do not go where you are outnumbered, you have gone to the wrong place to fight, because submarines are designed to proceed into enemy waters where they have to take on this whole panoply of the Soviets.



ATTACK SUBMARINE
CLASS INTRODUCTIONS

This is a chart showing the number of classes of United States and Soviet submarines that have been introduced since the mid-1950s. As you can see, since we put our last class of attack submarines to sea in 1976, the *Los Angeles* class, the Soviets have put seven classes of attack submarines to sea. Those are distinct classes.

In addition to that, there are three classes of ballistic missile submarines, and one new class of diesel-powered submarines. They are moving out on a grand scale to try to challenge us in the submarine superiority business and wrest that away from us.

We feel that with our programs, the improved SSN-688 which is being built right now and the SSN-21, we can retain submarine superiority in spite of this mismatch in application of resources.

SUBMARINE SUPERIORITY

✔ U.S. ✓ SOVIET

YEAR	QUALITY EDGE	QUANTITY EDGE	SUBMARINE SUPERIORITY
1970	✔ ✔ ✔	✓	✔ ✔ ✔
1980	✔ ✔	✓	✔ ✔
1990	✔	✓	✔ I 688
2000	✔ ✔ ✔	✓	✔ ✔ ✔ SSN 21

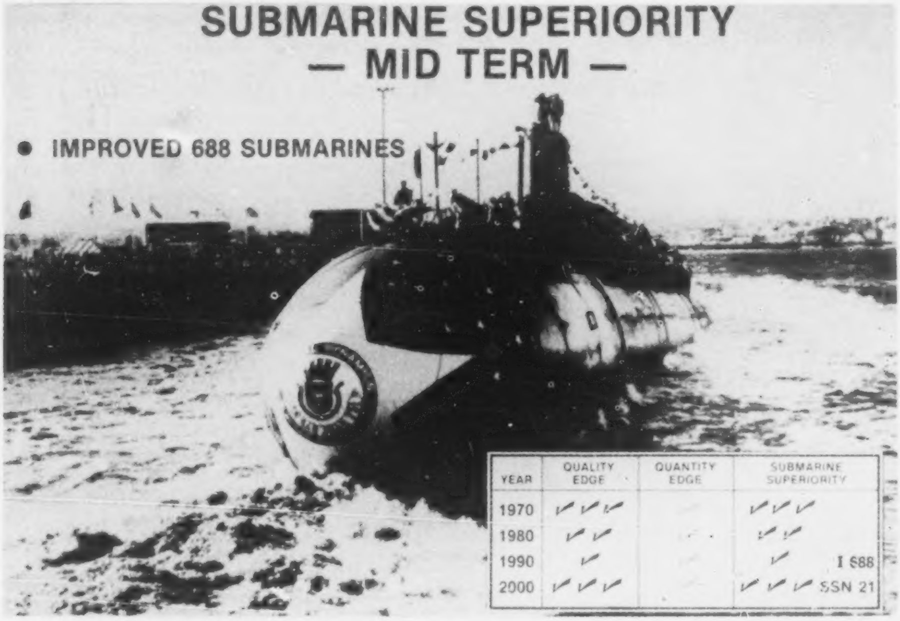
To try and grasp this in a fairly simple way, I have a sort of score card that compares our edge in quality, how good we are versus the Soviets in technology and people, with the Soviet edge in quantity since they will generally outmatch us and how that equates for submarine superiority. The blue checks represent the United States and the red the Soviets.

Up to 1970 we had an overwhelming quality edge that allowed us to work our will anywhere in the world submerged. The Soviets had the quantity edge, but our quality gave us an overwhelming edge in submarine superiority.

As we moved into the 1980's, our quality edge started to decrease slightly largely due to the advent of the Soviet *Victor III* submarines into the fleet. They retained the quantity edge, but we kept a reasonably comfortable margin in submarine superiority, and that is what we have today.

We project that as we move into the 1990s, our quality edge will continue to decrease. The quantity edge will stay about the same with the Soviets, and we will have a slightly degraded submarine superiority maintained largely by the quality of the improved 688 class submarines that we are building now. Later, I will give you an example of some of the quality improvements built into that submarine.

Our margin will continue to decrease until about the mid-1990's, when we introduce the new submarine SSN-21. As we move into the next century we feel that because of the capabilities of the new submarine we will regain the tremendous quality advantage we previously enjoyed and, concomitantly, the submarine superiority advantage. I hope to develop this in the next couple of vu-graphs.



SUBMARINE SUPERIORITY
— MID TERM —

- IMPROVED 688 SUBMARINES

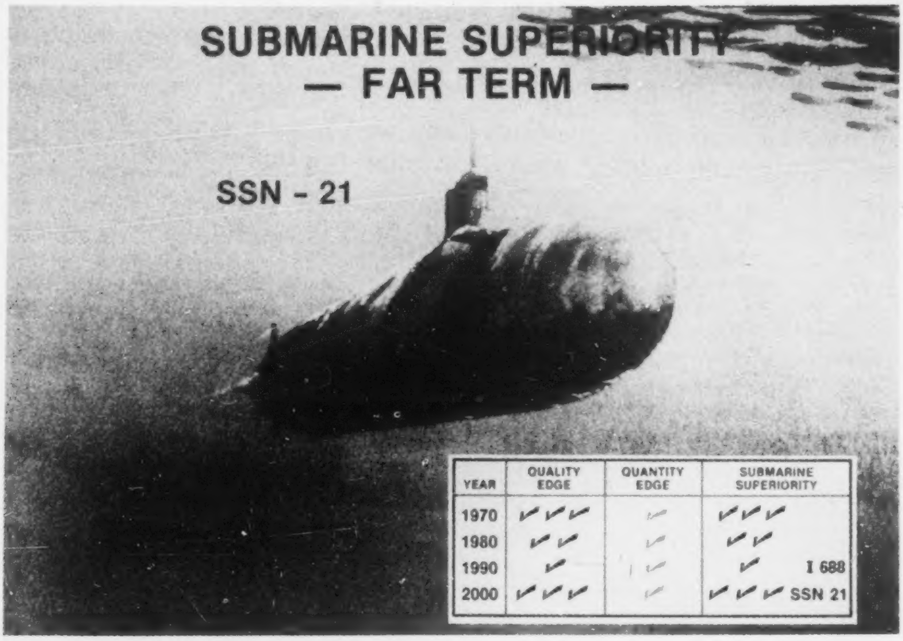
YEAR	QUALITY EDGE	QUANTITY EDGE	SUBMARINE SUPERIORITY
1970	✓ ✓ ✓		✓ ✓ ✓
1980	✓ ✓		✓ ✓
1990	✓		✓ I 688
2000	✓ ✓ ✓		✓ ✓ ✓ SSN 21

First of all, I would like to address submarine superiority for the near-term. We are improving our present-day submarines. We are putting coatings on them, advanced thin line towed arrays, and a new weapon. For the mid-term it will be the improved 688 class which will allow us to maintain that margin.

IMPROVED SSN-688 COUNTE
THE MID-TERM THREAT
VERTICAL LAUNCH SYSTEM
MODERN NAVIGATION SYSTEM
QUIETER PROPULSION
HULL COATING
MINING CAPABLE
BSY-1 COMBAT SYSTEM
ADVANCED TOWED ARRAYS
TWICE THE PERFORMANCE OF SSN 688

This submarine has these improvements in it, basically everything that we could fit in that submarine with the given hull volume twelve vertical launch missile tubes in the bow for the Tomahawk cruise missile that you saw on the video tape; a new modern navigation system, an electrostatic navigator and the ship is fully Arctic capable. We have moved the planes from the sail down to the bow so it can come up through the ice. It has a fine propulsion system, advanced towed arrays, and a new combat system which we are bringing in on time and we will deliver to the constructor, Electric Boat Co. in May of this year. The ship is also capable of mining, and it is fully coated.

We project by our analysis that across all missions this submarine is about twice as capable as those submarines that we initially built in the mid-1970's, the early *Los Angeles* class. In this process we have exhausted all the margin in this submarine. There is no more room to do anything that will enhance its capability in a cost-effective, substantive way. We are there. Yet, these submarines are more than a match for the submarines the Soviets are building today. We are confident that if we have to fight the war in the near-term or the mid-term, these are the submarines that will win it.

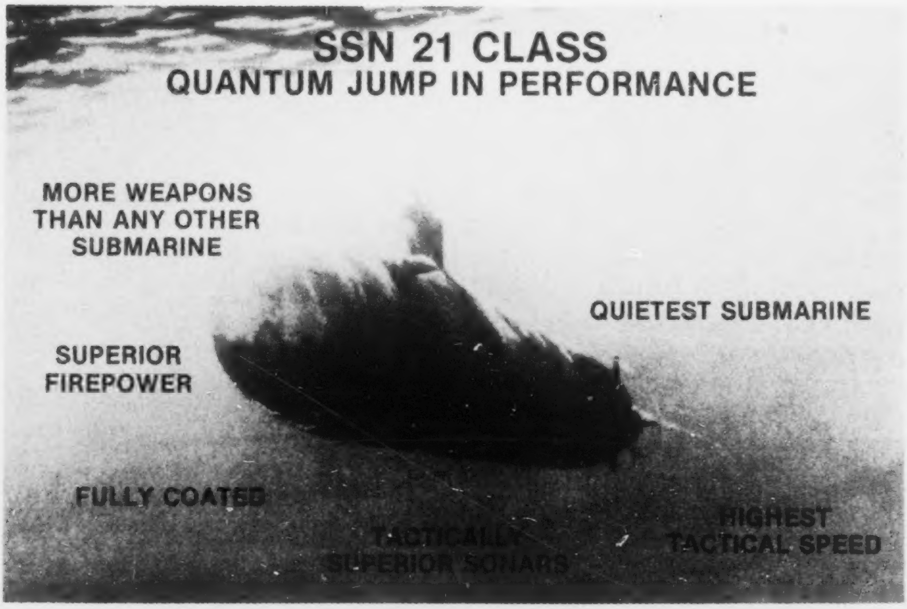


SUBMARINE SUPERIORITY
— FAR TERM —

SSN - 21

YEAR	QUALITY EDGE	QUANTITY EDGE	SUBMARINE SUPERIORITY
1970	✓✓✓	✓	✓✓✓
1980	✓✓	✓	✓✓
1990	✓	✓	✓ I 688
2000	✓✓✓	✓	✓✓✓ SSN 21

But in order to keep this edge into the next century, the new submarine, the SSN-21, is required to guarantee our submarine superiority.



SSN 21 CLASS
QUANTUM JUMP IN PERFORMANCE

MORE WEAPONS THAN ANY OTHER SUBMARINE

QUIETEST SUBMARINE

SUPERIOR FIREPOWER

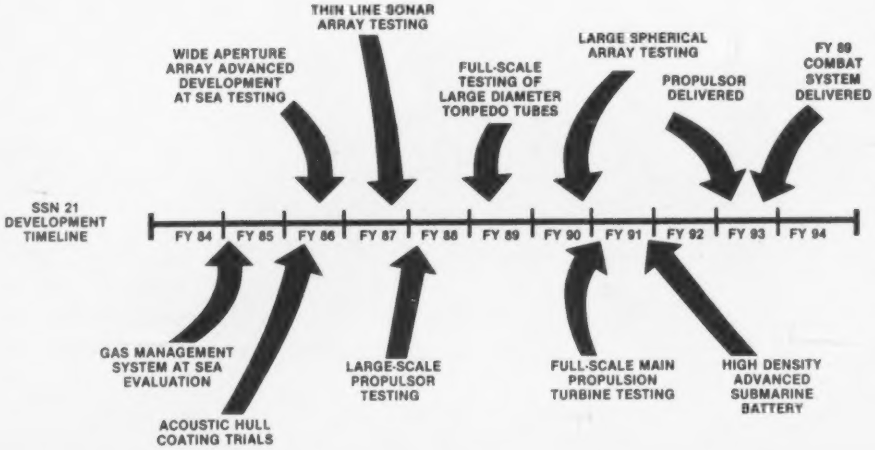
FULLY COATED

TACTICALLY SUPERIOR SONARS

HIGHEST TACTICAL SPEED

The SSN-21 will provide a quantum jump in performance. It will be evolutionary in development, but because we will not have built a new submarine for 19 years it will, in fact, be revolutionary in its capabilities. It will have more weapons than any other submarine that we have ever put to sea by a considerable margin; superior firepower because it has more torpedo tubes; it will be fully coated to increase its stealth; have new tactically superior sonars which I will discuss further in a minute; and will have the highest tactical speed and be the quietest submarine that we have ever built.

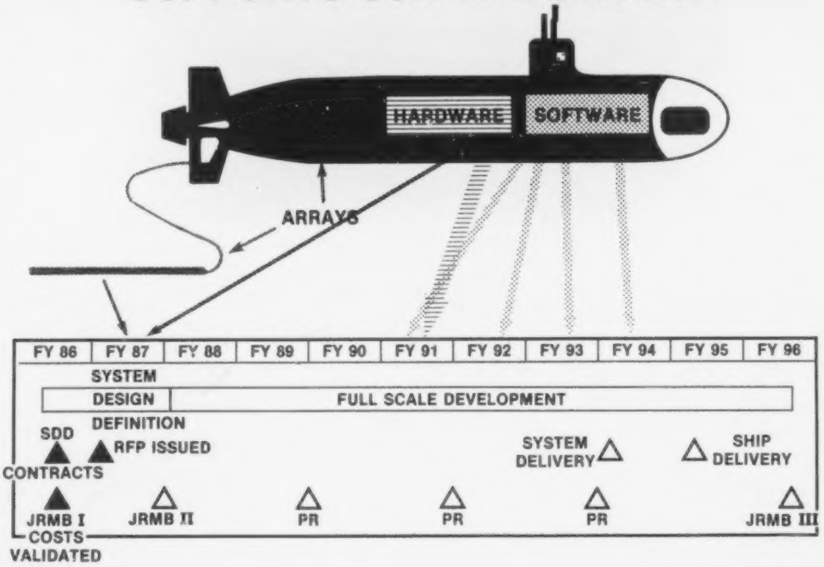
SSN 21 R&D ON TRACK


THIN LINE SONAR ARRAY TESTING
WIDE APERTURE ARRAY ADVANCED DEVELOPMENT AT SEA TESTING
FULL-SCALE TESTING OF LARGE DIAMETER TORPEDO TUBES
LARGE SPHERICAL ARRAY TESTING
PROPULSOR DELIVERED
FY 89 COMBAT SYSTEM DELIVERED
SSN 21 DEVELOPMENT TIMELINE
FY 84
FY 85
FY 86
FY 87
FY 88
FY 89
FY 90
FY 91
FY 92
FY 93
FY 94
GAS MANAGEMENT SYSTEM AT SEA EVALUATION
ACOUSTIC HULL COATING TRIALS
LARGE-SCALE PROPULSOR TESTING
FULL-SCALE MAIN PROPULSION TURBINE TESTING
HIGH DENSITY ADVANCED SUBMARINE BATTERY

To answer your question, Senator Warner, the research and development for this submarine is in fact on track. This is a very simplified drawing which I showed last year on how the research and development phases in for this submarine. There is a submarine going to sea in 1994, and various systems being tested at sea before the submarine goes to sea. We are up to this point here [indicating] right now. We have had the wide aperture array sonar at sea—it is at sea today. The thin line towed array sonar is at sea. The propulsor is being tested. Acoustic hull coatings are at sea. We are marching along. This is of course a tremendous simplification of a very, very involved process.

The combat system is largely the area where most of the contentious discussion has focused, but in fact there are many other areas where we are working the R&D very hard to deliver this submarine capability. I will spend a minute talking about the combat systems, though, because that is the question of the day.

FY 89 COMBAT SYSTEM DEVELOPMENT SUPPORTS SSN 21 DELIVERY


HARDWARE
SOFTWARE
ARRAYS
FY 86
FY 87
FY 88
FY 89
FY 90
FY 91
FY 92
FY 93
FY 94
FY 95
FY 96
SYSTEM DESIGN DEFINITION
FULL SCALE DEVELOPMENT
SDD CONTRACTS
RFP ISSUED
SYSTEM DELIVERY
SHIP DELIVERY
JRMB I COSTS VALIDATED
JRMB II
PR
PR
PR
JRMB III

Looking at the top of this vu-graph, submarine combat systems can basically be broken down into three components: the arrays that are external to the submarine hull that receive the sound in the water; the internal hardware that processes that sound through the display consoles, the preamplifiers, and so on; and the software, the computer coding that makes this whole thing work.

Right now we have the arrays at sea being tested. As I said earlier, the thin line towed arrays and wide aperture array are at sea today, tested, and the bow array is a variant of the Trident array which is at sea of course in eight Trident submarines today.

We feel that the arrays are well in hand. Admiral McKee will show you in more detail some of this hardware in the classified part of this presentation. Because of the system design we have put together, we will largely draw upon proven hardware. In fact, in the specifications we have promulgated, all hardware will have to be proven by 1991 with of course the submarine not going to sea until 1995.

That leaves the software. We are building the software in a modular fashion, which we are also doing with the BSY-1 Combat System which is being delivered now. This departs from previous practices in that it allows us to have discrete drops of software so that the entire software is not one big piece such that if a little bit goes wrong, everything is wrong.

If there is any need to mitigate risk in this development, it will be in the final deliveries of software which will affect some discrete capability and can be delivered later but do not affect the entire combat system capability. That risk mitigation is built into the specifications.

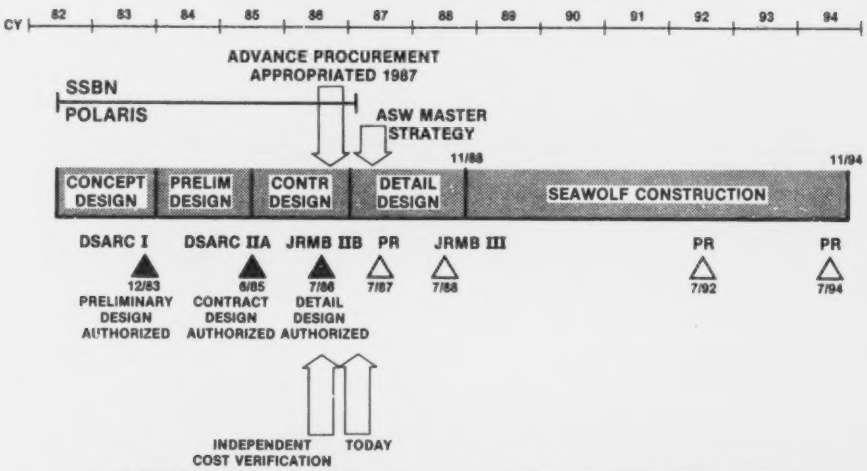
The contractors are required to point out the risk mitigation in the software area, and the points where we ought to look closely as to whether to invoke that risk mitigation.

This shows the design development scheme for this submarine. We are in system design definition right now. We let the fixed-price contracts for system design definition in mid-1986. IBM on the one hand is competing, with GE/RCA on the other hand.

We went through a Joint Resources Management Board review in the Office of the Secretary of Defense at that time, and all our costs were validated. We issued the request for proposal this February to two companies well experienced in combat systems' design, one primarily in submarines and the other largely in information management for the Aegis program. Both are working hard on this. They will submit their proposals in about July. We will then select a winner and proceed into full-scale development.

We are on track. It is not a difficult development process. It is not high risk by any means.

SSN 21 DESIGN ON TRACK



5 YEARS INTO A 12 YEAR PROCESS

This vu-graph illustrates the overall SSN-21 program. Once again, this is the program that we have had for about the last four years. We have not changed the program. This shows the period of conceptual design, the different submarine tradeoffs we were investigating, and a preliminary design which involved both shipyards, contract design, and finally now detail design where we are now.

We are on track. We have gone through various milestones which used to be called DSARC's in the Department of Defense. Now they are called JRMB's. We have met every milestone authorization required.

Last year was a particularly productive year. We finished our Joint Resources Management Board Milestone II-B which authorized detailed design. That included an independent cost verification. We received the advanced procurement that was mentioned, and the Navy was charged to develop an ASW Master Strategy which is going to be delivered to the Congress on 1 April.

The new submarine plays strongly in that strategy. It is in the "must have" category in our ASW plans for the future. Most importantly, we now are in detailed design at both shipyards, Electric Boat in Groton, and Newport News Shipyard. We are actually drawing the drawings from which we will build that ship.

It is a teaming arrangement with Newport News in the lead and primarily responsible for the front end of the ship, with Electric Boat having primary responsibility for the after end of the ship.

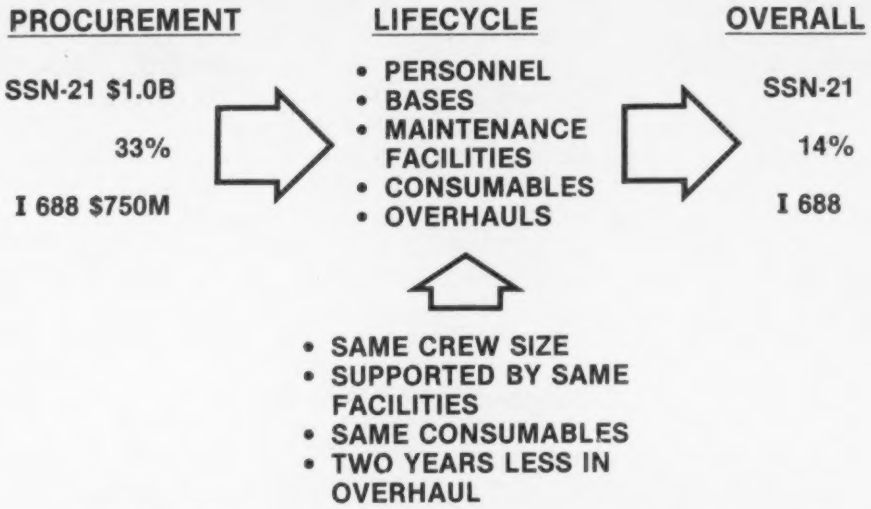
Admiral McKee will show you in much more detail how this process is going, and how we have actual pieces and parts being built today for the submarine.

We feel this is a good program. There is slack in it so that we are not pressing any parts of the program. In fact, we are as I indicated 5 years into a 12-year program. There was a time when we could do things of this nature in a much, much more efficient fashion. Probably the greatest example of that was back in the early days when we conceived of the idea that we wanted to put a ballistic missile to sea on a submarine.

From the time of original concept formulation and founding of the Special Projects Office to firing a strategic ballistic missile from a submarine at sea, only 5 years elapsed. From the initial idea to shooting the missile, with no missile, no warhead, no guidance system, no submarine and no launcher system, we fired a missile from sea five years later. Now just to build a new submarine takes 12 years.

I think it is certainly within our technical capability to do this. We have adequate funding to do it, and we are on track.

SSN-21 AFFORDABILITY



PROCUREMENT

SSN-21 $1.0B

33%

I 688 $750M

LIFECYCLE

- PERSONNEL
- BASES
- MAINTENANCE FACILITIES
- CONSUMABLES
- OVERHAULS

OVERALL

SSN-21

14%

I 688

- SAME CREW SIZE
- SUPPORTED BY SAME FACILITIES
- SAME CONSUMABLES
- TWO YEARS LESS IN OVERHAUL

SSN-21 - 3 TIMES AS EFFECTIVE

The final issue is cost and affordability. I think that is a reasonable question because this submarine does cost about one-third more than the price of the submarine it is replacing. In the same-year dollars SSN–21 is $1 billion a copy.

The improved 688, fully improved, in the same-year dollars costs about $750 million. So SSN–21 costs about one-third more. But the discussion should focus more broadly than just on procurement cost, because the real drivers are life-cycle costs. As I showed you today, I am sustaining a force of 97 SSN's with only 10 percent of the Navy's budget. There are other costs that come in, and the life-cycle costs are the ones that will get you if you do not pay attention: personnel, bases, maintenance facilities, consumables, overhaul, shipyard costs, and so on.

We made a decided effort in the design of this submarine to minimize life-cycle costs. Some of the specifics in that area include our mandate that the crew size would be the same. Although this is a much, much more capable submarine, it will have the same crew size. That will help hold down life-cycle costs over the 30-year lifetime.

It will be supported by the same facilities. We are building no new bases for this submarine. It will have the same consumables and the same weapons that I showed you on the videotape. And probably most importantly, over the 30-year life of this submarine we have designed a maintenance plan so that it will spend about two years less in the shipyard than the 688 class submarine. That is a significant cost savings.

If you put that all together over a 30-year lifetime you end up that an SSN-21 is about 14 percent more expensive than the improved 688 which it replaces. And, of course the reason you are building it is the fact that SSN-21 is about three times as effective in overall mission capabilities.

In fact, if you take this picture and then look at what we have today, a force of 97 attack submarines with 10 percent of that budget, the submarines we are building today are much more expensive than the submarines we built 15 years ago but we are still able to maintain that size force with a relatively small percentage of the Navy's budget. That counts procurement, and support costs.

SSN-21

Our figures, as best we can estimate, indicate that in the year 2000 when we will have 15 SSN-21 submarines, our total submarine cost, procurement and operation and support, will be approximately the same as today when we have no SSN-21 submarines. That is because as we move out in time the older submarines will go first, and they are the ones that are costing us the most in shipyard overhaul and maintenance.

So that basically is the story. I think we are ready to go ahead. I think we have moderate risk in all areas. I think we have presented our case adequately through the OSD review cycle, and we are ready to proceed.

[The prepared statement of Admiral DeMars follows:]

PREPARED STATEMENT OF VICE ADM. BRUCE DeMARS

US Navy, Deputy Chief of Naval Operations
(Submarine Warfare)

Mr. Chairman and distinguished members of the Committee, I am again privileged to report to you on the status of the Submarine Force. I want to:

- Convey an understanding of the uniquely significant contribution the Submarine Force makes in the defense of our country,
- Provide some facts to show that this is a very cost effective contribution and,
- Show that we are a lean force, highly leveraged, whose budget contains little, if any, margin.

NATIONAL OBJECTIVES AND SUBMARINE SUPERIORITY

I do not need to tell you that we are an island nation with all that entails in dependence on overseas trade, mutual support with our allies and freedom of the seas. In support of this country's objectives, the Navy's Maritime Strategy has submarine superiority as a keystone. Our nation has enjoyed submarine superiority since World War II and has, to a degree, taken it for granted. Most simply stated, submarine superiority is the ability to work our will underwater, anywhere in the world, in support of national objectives. We have maintained this superiority for more than four decades and it has been of inestimable value to our country. Our ballistic missile submarines are the preeminent nuclear deterrent in our strategic triad, and the unmatched warfighting capability of our attack submarines provides a like degree of conventional deterrence.

Due in large part to your support over the last several decades, today's Submarine Force is one of the country's most efficient and cost effective defenses - these forces cost less than 6 percent of the Department of Defense budget and 10 percent of the Navy's manpower.

Since these forces are highly leveraged, I have strong concerns for the future based upon possible funding constraints. The funding we have requested will support our programs, but there is little, and in some cases, no margin. Your continuing support of our lean budget will be even more critical in the future as we face an adversary clearly dedicated to seizing our vital submarine superiority.

SUBMARINE SUPERIORITY

STEALTH, MOBILITY, ENDURANCE, FIREPOWER

The maintenance of submarine superiority is, of course, a complex process requiring long-term programs and careful resource decisions. Submarine superiority transcends a simple comparison of platform characteristics such as quieting, speed and depth. It requires a balance of many factors including people, training, supporting logistics, weapon reliability, tactical development, cooperation with allies, modernization and more. The proper blend of these factors is founded on the nuclear submarine's inherent characteristics --stealth, mobility, endurance and firepower.

Stealth - The submarine is the first true stealth platform, able to operate undetected wherever required. Our submarines can choose the time, place and method of engagement while maintaining the tactical initiative to the point of attack.

Mobility - Coupled with stealth, the submarine's mobility provides an unequalled ability to operate wherever required. The mobility provided by nuclear power can place our submarines in any ocean in the world in just a few days; an adversary can never be sure of where or how many. This uncertainty is one of our principal advantages.

Endurance - The submarine's endurance at sea is unexceeded, operating unsupported in excess of 90 days, while maintaining the highest readiness. This staying power is of inestimable value in any degree of conflict and provides a high degree of flexibility to the operational commander.

Firepower - The submarine possesses tremendous firepower. With the world's most reliable strategic missiles, best heavyweight torpedoes and a variety of cruise missiles, the submarine can not only successfully engage all targets at sea but can project its striking power ashore.

THE CHALLENGE

The importance of submarine superiority and all that it conveys to our nation has not been lost on the Soviet Union. While not the only spur to the past decades of Soviet Navy modernization, the quality of the U.S. Submarine Force and its ability to threaten directly those assets the Soviets most dearly prize have been prime factors.

The Soviet Navy has continued to increase its power and flexibility, transforming itself into a worldwide naval power now capable of prolonged operations and distant deployments. Even more impressive than the number or scope of operations, however, is the Soviet quest for quality. They understand that in the face of continued U.S. resolve, quantity alone is insufficient. The prime of Soviet research, engineering and technology, combined with enormous expenditure of resources, have produced significant improvements in Soviet submarine quality. The results are evident.

The Soviet submarine force is the most effective and threatening part of the Soviet Navy, consuming the largest part of their budget. At the end of World War II, the Soviet submarine force was large, but not a first-line force. Initially dependent upon captured technology, they methodically developed their own capabilities. Their early nuclear submarine classes were relatively simple and marginally effective; however, succeeding classes have displayed incremental and substantial improvements. This relentless developmental program has led to 7 new attack submarine classes and 3 new strategic submarine classes in the past 10 years. Modern Soviet submarines are large, complex, and multi-mission capable. The newest Soviet submarines clearly reflect their continued effort to wrest submarine superiority from the U.S. Navy.

In addition to building highly capable submarines, the Soviets continue to expand their operations. Their strategic submarine forces patrol both in the open oceans and in protected bastion areas, constituting a significant portion of the Soviet strategic nuclear reserve. Their attack submarines operate globally, supporting their national strategy. They demonstrate improving operational maturity and sophistication which match their enhanced technical capabilities.

Nevertheless, the Soviets face the same laws of physics that we do; there is no indication that they have reached current performance levels by any technological breakthrough. Their continued improvement, as does ours, depends on long-term programs. Those who have followed Soviet advances closely, realize this development is not a surprise. It has been obvious for years that the Soviets have devoted huge resources to long-term programs. Their consistent and obvious dedication to submarine warfare is paying off - the gap between the U.S. and Soviet submarine forces has narrowed. We are equally determined. Geography and our strategy require our Submarine Force to respond to these advances and contend with the full range of the Soviet's expanding naval power. We possess the capability and the will to maintain submarine superiority; this is the basis for our programs and plans.

U.S. SUBMARINE OPERATIONS

During 1986, U.S. submarines continued their worldwide operations in support of peace. These ships conducted strategic deterrent patrols, exercised with all Fleets, participated in advanced training and development exercises and conducted a broad range of important missions to ensure our readiness is maintained. This pace and scope of operations will continue.

STRATEGIC SUBMARINE OPERATIONS

I consider today's strategic submarine force to be the best defense bargain this country has ever developed. Our SSBNs provide about one-half of the strategic warheads in this country's arsenal for less than 4 percent of the total DOD budget and for about 25 percent of the DOD strategic budget. The Navy is very proud to provide a deterrent force which, because of its survivability, promotes crisis stability at a cost of less than 10 percent of the Navy's budget and about 3 percent of the Navy's people.

Our ballistic missile submarine force today consists of twenty-eight POSEIDON and eight TRIDENT SSBN submarines. Twelve of the POSEIDON submarines are fitted with the TRIDENT I (C-4) missile system. The remaining sixteen are armed with POSEIDON missiles. The TRIDENT SSBNs all carry the TRIDENT I (C-4) missile system. Seven TRIDENT and nineteen POSEIDON SSBNs are fully operational and are making strategic deterrent patrols. USS ALASKA and USS NEVADA entered the fleet in 1986 as the seventh and eight TRIDENT submarines.

Last year, our SSBN force completed 88 deterrent patrols including 21 by TRIDENT SSBNs. This represents a 40 percent increase over 1985 in the deterrent contribution of the TRIDENT ships. These submarines are the most effective warships of their kind in the world.

ATTACK SUBMARINE OPERATIONS

Similar to the strategic submarine force, today's attack submarine force is extremely cost effective. About 10 percent of the Navy's budget provides 97 SSNs -- we are almost at our force level goal of 100 SSNs. Today's force consists of 35 SSN-688 class, 39 SSN-637 class, 13 594-class, 8 pre-594 class and two converted SSBN-608 class submarines. Four diesel submarines are retained to support fleet training requirements. With the two new 688 class SSNs which joined the fleet since I testified last year, we are a more capable force today.

1986 continued the tempo and type of attack submarine operations of previous years - 50 percent of their operating cycle away from their homeports with almost one-third of their time on extended deployments. These deployments, ranging from three to six months, are conducted by every attack submarine and involve operations with our fleets, exercises with allies, and independent operations. These enormously successful deployments to all oceans of the world give us great confidence in our readiness.

An example of the performance demanded by these operations was demonstrated in the Arctic last year. Three nuclear attack submarines, two from the Atlantic Fleet and one from the Pacific, operated deep in the Arctic Ocean in support of various scientific and operational objectives and surfaced together at the North Pole. Their success in meeting all objectives in a hostile and unforgiving environment is eloquent testimony to the readiness of the Submarine Force.

PROGRAMS TO MAINTAIN SUBMARINE SUPERIORITY

Our careful, continuing analysis of the threat and the imperative to counter this threat within available resources have resulted in the programs presented in the FY 88/89 Budget request. We are proud of the current status of the Submarine Force and the programs presented build on the lessons we have learned in maintaining submarine superiority for over four decades.

Programs will be discussed in the context of strategic modernization and attack submarine superiority. Underpinning this budget request is the approximately 53 percent of Submarine Force funding which goes toward maintaining the high readiness we have today. Athough little discussed, these are key expenditures for personnel, maintenance, training, shipyard overhaul, repair parts and the myriad of other support and logistic items so necessary to maintain a high capability force. With 36 SSBNs and 97 SSNs in commission, we are near the end of the Submarine Force expansion that we have worked so hard to sustain for the past thirty years. During a period of little or no growth in defense expenditures, it is absolutely critical that we properly support today's fleet. This is our first priority.

STRATEGIC MODERNIZATION

During the past six years, the Navy has executed a highly successful and broad-based modernization of the submarine launched ballistic missile (SLBM) leg of the strategic triad. The integrated modernization of the submarine, missile, base and communications systems remains on schedule and within budget to maintain this invulnerable deterrence into the 21st Century.

TRIDENT SUBMARINE

The FY 88/89 Budget requests one TRIDENT SSBN each year. These are the best strategic submarines in the world; quieter and faster than their design predictions and with significantly more firepower than the 1960's vintage POSEIDON submarines they replace. Of the fourteen TRIDENTs thus far authorized, seven are making routine patrols from their Bangor, Washington, Submarine Base. USS NEVADA (SSBN 733) was delivered to the Navy in August 1986, twelve weeks early, and is now conducting post-construction shakedown operations.

Five TRIDENT submarines are currently under construction, and the construction of the FY-87 ship has been authorized. The FY88/89 Budget requests authorization for the 15th and 16th TRIDENT submarines and advance procurement for the 17th and 18th ships. We continue to support the strategic modernization plan of building one TRIDENT each year and solicit your continued support for this most important and highly successful program.

TRIDENT submarines are highly reliable, having completed 57 strategic deterrent patrols, nearly ten ship-years at sea, without even one day of degradation in assigned target coverage. This outstanding record is possible in large part due to the total system support approach embodied in the TRIDENT Submarine Base at Bangor, Washington. This well-engineered concept makes it possible to keep these complicated warships at sea for 66 percent of their life cycle as compared to 55 percent for the older POSEIDON SSBNs.

KINGS BAY BASE

To support the first squadron of TRIDENT SSBNs fitted with the TRIDENT II (D-5) missile system, the FY-88/89 Budget request continues the military construction at the TRIDENT Submarine Base, Kings Bay, Georgia. This base will essentially duplicate the resources and support functions of the Bangor base with modifications to support the TRIDENT II (D-5) missile system. We have been extremely pleased with all aspects of Submarine Base Bangor and are using the same management team to build the Kings Bay facility. Kings Bay is the Navy's largest construction project and it is progressing on schedule to support the arrival of the first TRIDENT II SSBN at Kings Bay in 1989.

TRIDENT II (D-5) MISSILE

The Navy is proud of the demonstrated reliability of its strategic missile program. The TRIDENT I (C-4) missile has established an exceptional record of success with 55 consecutive successful operational test flights from a submarine during the past three and a half years. The same engineering management group is responsible for the development of the TRIDENT II (D-5) missile scheduled to join the fleet in 1989. An important milestone was reached on 15 January 1987, the exact date scheduled four years ago, when the first TRIDENT II (D-5) missile, X-1, was successfully launched from Cape Canaveral.

The TRIDENT II (D-5) missile is the cornerstone of the strategic modernization program. Its combination of range, accuracy and payload will make it capable of conducting retaliatory strikes against the full range of Soviet targets. Because of its survivability and its ability to place at risk those hardened assets the Soviets prize most, the TRIDENT II (D-5) missile system promotes strategic stability. The FY 88/89 Budget requests funding to continue TRIDENT II (D-5) missile development leading to an initial deployment in 1989.

STRATEGIC COMMUNICATIONS

Strategic submarine communications are among the most robust of those supporting any weapon system we have in defense of our country. The redundancy, reliability, constant exercise and credible oversight provide an integrated system which fully supports the strategic deterrence mission. This year the Extremely Low Frequency (ELF) Communications System became operational. This important system will permit SSBNs to receive messages while operating at deeper depths and higher speeds, thereby enhancing the security, operational flexibility and effective command and control of the SSBN force.

Another significant milestone this past year was delivery of the first E-6A HERMES aircraft. This strategic communications aircraft has significantly greater capability than its TACAMO predecessor. These developments, building on an already highly effective system, will maintain reliable, redundant connectivity with the National Command Authority for the foreseeable future.

STRATEGIC SUBMARINE SECURITY

U.S. SSBNs are the most secure leg of the strategic triad now and in the foreseeable future. There are no ASW breakthroughs on the horizon that present a threat to the SSBN force. The major factor supporting this assessment is the Navy's comprehensive program which continually evaluates strategic submarine security.

We devote significant resources and efforts to assess the realistic threat to the force. The security program findings have been directly incorporated into our operations, equipments, tactics and submarines. These changes have made significant improvements in SSBN capabilities, but most importantly, these improvements have maintained our security well ahead of potential emerging threats.

We continue to examine not only the present and near-term but also the long-term threat, involving conceptual possibilities. The entire range of threats from basic phenomenology to operations is investigated by the best scientific, technical and operational facilities and personnel the country can offer. Due to the importance of this program, the process is independently reviewed, on a continuing basis, by respected agencies outside the Navy. These reviews give us added confidence that we understand and can counter the threat.

Although you often read about an imminent breakthrough in ASW, this highly disciplined and exhaustive program consistently has concluded that there is no realistic threat to our SSBN force. We are not complacent or overconfident; but these findings are the basis for our confidence in our SSBN invulnerability. The FY 88/89 Budget requests funding to continue this evaluation.

ATTACK SUBMARINE SUPERIORITY

Today the U.S. Attack Submarine Force is the finest in the world -- a cost effective combination of people, technology, training and tactics. However, we face an unprecedented challenge to our superiority from the Soviet Navy. We can successfully meet this challenge because, most simply put, our people are better and our technology is better. While the Submarine Force approach to melding readiness, tactical development and realistic training continues to be among the best in the Navy, we continue to question, evaluate and improve. This healthy process will, of course, continue. Equally important, we take the same approach to our submarine and hardware modernization. The defense budget trend has provided an additional imperative to seek the most cost conscious, yet threat responsive, investment strategy. This breaks down into a near, mid, and far-term modernization investment strategy.

NEAR-TERM SUPERIORITY

Our near-term superiority hinges upon modernization programs which incorporate in our current ships the latest technologies to extend their first-line status. We place a high premium on individual ship capability and the enhancement programs required to keep the tactical edge. The most important modifications include the MK-48 advanced capability (ADCAP) torpedo, the TOMAHAWK cruise missile, required combat system improvements, thin line towed arrays with greatly enhanced detection capability and special hull treatments which improve the detection capability against the quieter targets as well as decreasing our own counterdetectability. While these significant upgrades are particularly applicable to the SSN-637 class ships as they reach their twentieth anniversary, they also greatly improve the capabilities of the SSN-688 class. These programs are a cost effective way to increase capability; however, tight financial constraints limit our ability to implement the optimum upgrades. The FY-88/89 Budget requests the minimum funding for balanced force modernization needed to counter the Soviet threat.

One of our prime initiatives is the ADCAP torpedo which will counter not only current and near-term threats, but also the increasingly sophisticated targets of the future. It is a necessary follow-on to our present MK-48 heavyweight torpedo, the best torpedo in the world today. ADCAP's capabilities are mandatory to make full use of our platform and sensor development; a torpedo with less capability simply will not meet the threats of the future.

ADCAP is currently undergoing technical evaluation. Performance problems noted during testing in the past year have been thoroughly investigated and corrective action is in progress. This torpedo will perform as designed. The FY-88/89 Budget requests funding to complete ADCAP baseline development, to continue low rate procurement in FY-88 and to shift to full production in FY-89.

The Submarine Force continues introduction of TOMAHAWK anti-ship and land-attack cruise missiles which greatly expand our warfighting ability, attack range and tactical flexibility. Twenty-one submarines are currently equipped and certified for TOMAHAWK; almost three-quarters of the attack submarine force will be certified by 1991. Our FY-88/89 Budget request provides for the achievement of TOMAHAWK inventory objectives while maintaining dual source competitive production.

A program which greatly increases the firepower of our attack submarines is the SSN-688 vertical launch system (VLS). This improvement places 12 launch tubes external to the pressure hull, compatible with all TOMAHAWK variants. Now standard on every SSN-688 submarine being built, the VLS configuration has been successfully tested at sea. Combat system software development will provide full VLS capability in mid-1989. The FY-88/89 Budget requests funding to complete combat system software development.

MID-TERM SUPERIORITY

Our efforts to ensure submarine superiority in the mid-term are focused on the Improved SSN-688 class submarine equipped with the new AN/BSY-1 Combat System, the ADCAP torpedo, and the SEALANCE ASW Standoff Weapon. While the baseline SSN-688 is a superb submarine, our studies make clear that its superiority over the projected 1990s Soviet submarines is insufficient to overcome our historic numerical disadvantage. The fully Arctic-capable Improved SSN-688 is designed to meet that challenge with the latest improvements in quieting, sensors, and combat systems. Our analyses indicate that the Improved SSN-688 will be more than twice as effective as the current 688. Seventeen Improved SSN-688s are under construction; the first, SAN JUAN (SSN-751), was launched last December. Five Improved SSN-688 class submarines are requested in the FY-88/89 Budget.

A major feature of the Improved SSN-688 class program is the AN/BSY-1 Combat System. This system will provide significant improvements in acoustics and weapons capabilities over any system at sea today - advances such as improved active sonar, improved under-ice and mine detection capability, lower self-noise, reduced space and weight, improved commonality and maintenance, and a reduced training pipeline. I am pleased to report that the development and production of this complex system is proceeding within budget and on schedule. All AN/BSY-1 components have been delivered to the shipyards as required to support current ship construction. The electronic components of the first system are now under test at the contractor's plant and will be delivered, as scheduled, to the shipbuilder in May 1987 for installation in SAN JUAN (SSN-751). I am confident that the AN/BSY-1 Combat System will provide our submariners with the capability to counter the best Soviet submarines for the balance of this century. We seek your continued support for our FY-88/89 Budget request which funds the completion of the AN/BSY-1 development program and system deliveries in support of ship construction schedules.

While we have maintained a significant sonar detection advantage over the Soviet submarines, we presently have no conventional weapon that fully exploits that advantage. With modern combat systems such as AN/BSY-1, detection and localization may occur well beyond MK-48 or ADCAP range. The SEALANCE ASW Standoff Weapon is being developed to take advantage of that capability as an important companion to the ADCAP torpedo. SEALANCE will employ the MK-50 torpedo as payload and permit attack against enemy targets well outside today's conventional torpedo range. Full scale development of SEALANCE began in August 1986 and is leading to the first test flight in July 1989. Our FY-88/89 Budget requests funding to support SEALANCE development leading to IOC.

Thus, for the mid-term, we are counting on the Improved SSN-688s to assume the burden of the toughest wartime assignments through the 1990s, gradually replacing the SSN-637 class ships as they are retired, and providing a transition to the SSN-21. We will have done all that we can with the SSN-688 hull; a new design submarine for the challenges of the 21st century is imperative.

FAR-TERM SUPERIORITY

The SSN-21 SEAWOLF class submarine, fitted with the FY-89 Submarine Combat System, will be the foundation for far-term submarine superiority. SSN-21 represents a quantum improvement in submarine warfighting capability. Much quieter than any previous submarine, it will take to sea unequalled sensor capability and firepower. Its high tactical speed provides a much greater search rate with a very low probability of counterdetection. Repeated and thorough analyses predict SSN-21 will have three times the mission effectiveness of the Improved SSN-688 and will be highly superior to Soviet submarines for the foreseeable future. If we are to maintain undersea superiority in the far-term, I see no alternative to SEAWOLF.

I am pleased to report to you that the SSN-21 development program, including the FY-89 Submarine Combat System, continues to meet all scheduled milestones and objectives. Since I testified before you last year, an Office of the Secretary of Defense milestone review was successfully completed, an independent survey verified our cost estimates, research and development continued, and funds for initial long-lead advanced procurement were authorized in the FY-87 budget. The acquisition plan has been approved, Contract Design is completed, and we are now in Detailed Design. In all, a most productive year.

The SSN-21 acquisition plan incorporates the principles of competition and teaming, employing the unique design and construction capabilities of both Newport News Shipbuilding and the Electric Boat Division of General Dynamics. This plan employs the very best submarine design talent in the United States and places both competing shipbuilders in an equivalent position to bid for construction of the FY-89 lead ship of the SEAWOLF class.

While the SSN-21 program remains on track, I am concerned with the potential impact of any funding reductions, particularly on long-lead material procurement and on FY-89 Submarine Combat System development. Our FY-88/89 budget requests continued funding for long-lead material procurement, FY-89 Submarine Combat System development and authorization for construction of the SSN-21 lead ship; taken together, they constitute my most urgent budget priority. Inadequate funding in these areas would almost certainly jeopardize the scheduled SSN-21 construction and delivery and/or result in a reduction in capabilities. I again urge your strong support for the SSN-21 which will guarantee our undersea superiority well into the next century.

PERSONNEL

The fundamental ingredient to our submarine superiority, even beyond the technological advances, is unquestionably our Submarine Force personnel - both operational and support personnel. Their skill and performance are uniformly superb and, due to the Soviets' quest for submarine superiority and to our constrained funding climate, even more important than ever before.

We are a highly leveraged force with just 10 percent of the Navy's personnel supporting 38 percent of the Navy's combatant ships. The unique operational experience and technological talents of our submarine qualified officers and enlisted men represent an invaluable national resource that, if lost, cannot be quickly replaced -- you can't buy experience. We saw the effects in the mid and late-1970s of reduced personnel manning and experience. Our readiness was degraded, and long-term recovery programs were required to overcome these effects. Our personnel picture is greatly improved today, and we are grateful that the special incentives provided by Congress since 1980 have been very effective in supporting this recovery. While we have made substantial progress in correcting our personnel shortfalls, some problems remain. Furthermore, we must sustain the gains we have made and avoid the tendency to now neglect the need for updated and appropriate compensation.

The value of Submarine Duty Incentive Pay (SUBPAY) has eroded over 40 percent since the last increase in 1981 and its effectiveness in retaining our submarine officer and enlisted personnel has diminished commensurately. The FY-88/89 Budget requests funds to restore most of the value lost and help keep our personnel on a par with civilian professional and technical workers.

Submarine officer retention improved sharply from 33 percent in FY-81 to 48 percent in FY-85. However, it decreased to 43 percent in FY-86 and is projected to be 40 percent in FY-87. Officer accessions peaked near goal in FY-83, but have declined since then. The reasons are of course complex but one factor is constant - these highly skilled officers have talents which are most valuable to a wide variety of civilian companies.

As a result of inadequate accessions and the poor retention of past years, we continue to experience a shortage of nuclear-qualified submariners in the more senior grades. This requires us to fill lieutenant commander nuclear engineer billets with top performing lieutenants. We recognize the great responsibility we place on these fine young officers by spot promoting them to lieutenant commander. However, the authority to do so expires 30 September 1987. We request permanent spot promotion authority, but as a minimum, require extension of the present authority. Since all promotions occur within statutory grade ceilings, this type of promotion is a no-cost management tool.

Your support continues to be key in the management of this small community. Enhancements to Nuclear Officer Incentive Pay enacted in FY-86 are enabling us to increase the pool of nuclear-trained junior officers, thereby reducing our predicted shortage of experienced officers in the grades of lieutenant commander through captain from the current 409 to about 250 by the end of FY-92. However, I am concerned with the impact of the joint specialist/joint duty programs on our Submarine Force officers. Full compliance by the submarine community with the joint duty requirements of the Goldwater-Nichols Act would greatly aggravate our shortage of experienced nuclear trained officers. I strongly echo the CNO's recommendation that we work together to ensure the requirements to develop joint warfare expertise does not inhibit our ability to have our best fighting officers commanding in the fleet.

SUMMARY

In summary, I return to my opening remarks in the hope that this testimony has convinced you of the significant contribution the Submarine Force makes to our nation's security and of the relative cost-effectiveness of that contribution. With about 20 percent of the total Navy budget, we provide the only invulnerable leg of the country's strategic deterrent and a powerful force of 97 nuclear attack submarines. I consider this the best bargain in the Department of Defense today.

The programs I have briefly outlined represent a balanced approach to support our submarines and our people, to continue our vitally important strategic modernization program, to modernize our attack submarines to meet the challenge of the future, and to initiate construction of the SSN for the 21st century. These programs are well managed and on track, but our FY-89/89 budget request contains very little, if any, margin for reduction.

The essential elements of the FY-88/89 program are the production of the TRIDENT II (D-5) missile system, the construction of two TRIDENT SSBNs and five Improved SSN-688s, and the authorization for construction of the first SSN-21 class submarine. I believe that these programs represent the most cost-effective deterrent that we can provide to the citizens of our country, and I urge your continued support. Thank you.

Senator **Kennedy**. I thought, if it is agreeable with the committee, we would go to the GAO and then we would be able to get their presentation, and then be able to question both of them.

John Landicho, if you would be good enough to come forward. We will have the questions in open, and then we will go into the classified session.

I can just about see our witnesses down there beyond whatever is underneath the green velvet blankets.

Would you want to introduce your associates, please.

STATEMENT OF JOHN LANDICHO, SENIOR ASSOCIATE DIRECTOR, NATIONAL SECURITY AND INTERNATIONAL AFFAIRS DIVISION, GENERAL ACCOUNTING OFFICE, ACCOMPANIED BY RALPH TAVARES, SUPERVISORY AUDITOR, BOSTON REGIONAL OFFICE, NAVAL UNDERWATER SYSTEMS CENTER, GENERAL ACCOUNTING OFFICE; AND FREDERICK A. BIGDEN, GROUP DIRECTOR, SUPERVISORY EVALUATOR, NSIAD, GENERAL ACCOUNTING OFFICE

Mr. **Landicho**. Thank you, Mr. Chairman.

Yes, I will. To my immediate right is Ralph Tavares from our Boston Regional Office. He is positioned and doing work at the Naval Underwater Systems Center in Newport, RI. To my left is Fred Bigden, Group Director on my immediate staff who is both responsible for the *Seawolf* itself and the related combat system.

With your permission, sir, I would just like to enter my statement for the record and go right into our four areas of concern.

Senator **Kennedy**. Yes. All the statements will be printed in their entirety as if read.

Mr. **Landicho**. The first two areas of concern, the *Seawolf* affordability and *Seawolf* construction techniques will be addressed by Fred Bigden. Then the last two on simultaneous development efforts and concurrency with the combat system program will be addressed by Ralph. They will just summarize.

At that point, Mr. Chairman, we would be open for questions and answers.

Senator **Kennedy**. Fine.

STATEMENT OF FREDERICK A. BIGDEN

Mr. **Bigden**. Mr. Chairman, thank you.

The first area I would like to address is the affordability area. Basically it deals in the two areas of force structure and shipbuilding.

Historically, using the Navy's data, the attack submarine force has taken about 20 percent of the ship construction budget. When the *Seawolf* came on——

Senator **Kennedy**. If I could just make a comment, the next time you come up here—I do not know how anybody else's eyes are, but those are really tough figures to see from here.

PROCUREMENT OF SUBMARINES

Mr. **Bigden**. As I was saying, historically procurement of attack submarines has taken about 20 percent of the Navy's ship construction budget. When the *Seawolf* projections were prepared, the

Navy said that with a 2 percent real growth in the shipbuilding budget, they could probably keep total attack submarine construction costs at 26 percent of the shipbuilding budget. Today when we look at the figures in 1987 dollars, with an annual average appropriation for shipbuilding of $11 billion, and a *Seawolf* costing about $1.1 billion each, the Navy's planned rate of construction would take about 32 percent of the ship construction budget.

Of course if costs were to go down, as in our example where we reduce the cost of a *Seawolf* by $300 million, then the percentage relationship would also reduce to 27 percent. Our concern, however, is that if costs were to increase or real budget growth is not achieved, then the cost of 3⅓ submarines per year would take a much larger or more significant portion of the ship construction budget.

The concern is that there are force implications not only for the Navy's total force structure, but also for the Navy's goal of 100 nuclear attack submarines.

CONSTRUCTION TECHNIQUE

The second area that I would like to talk about deals with construction technique.

Senator **Dixon**. Would you ask the witness, does that include the two aircraft carriers when you talk about that percentage?

Mr. **Bigden**. You mean the 32 percent? That is basically for attack submarines.

Senator **Dixon**. Thank you.

Senator **Kennedy**. Well, we are talking about the percentage. That is not just the attack submarines, is it?

Mr. **Bigden**. The $11 billion?

Senator **Kennedy**. Yes.

Mr. **Bigden**. No. That is just an average shipbuilding budget in fiscal year 1987 dollars.

Senator **Kennedy**. No, but the 32 percent. That represents 32 percent of what?

Mr. **Bigden**. Of the $11 billion for ship construction costs.

Senator **Kennedy**. All ship costs?

Mr. **Bigden**. All ship construction, yes, sir.

Senator **Dixon**. My question was, Does all ship construction include the two aircraft carriers or not?

Mr. **Bigden**. No, we did not include the Navy's funding request for two new carriers in this cost analysis. There are going to be peaks in future shipbuilding appropriations when funds are provided to construct the two new carriers. What we are trying to show here is an annual average ship construction appropriation of $11 billion. Without any special adjustments, like full funding for the two aircraft carriers or something like that, then the Navy's planned *Seawolf* construction rate would take about those percentages.

The second area that we are concerned with deals with the construction techniques. Basically the SSN-21 is going to be built using modular construction techniques with probably a higher degree of modulization than was used in previous attack submarine construction programs.

One of the keys of successfully building the *Seawolf* using this particular construction technique deals with the ship's detailed design drawings. When modular construction is used, especially a sophisticated or more advanced modular construction technique, detailed design drawings need to be completed up front. The Navy's goal, at this point in time, is to have approximately 80 percent of the detailed drawings done prior to contract award in November 1988.

It is important not only to have a large percentage of the detailed design drawings completed but to have those drawings validated so as to make sure that the boxes fit, that the electrical connections meet, the pipe runs meet, that everything comes together as the ship is being built. One way of validating the detailed design drawings is through program reviews, scale model mockups, and simular validation techniques.

We believe that validation must be done. If it is not done then there is the potential to experience similar problems that is currently being experienced on the improved *Los Angeles* class. It has caused cost problems. For example, work on the improved *Los Angeles* class mockup was delayed or stopped. Some drawings were not validated resulting in some construction problems which the Navy now is in the process of fixing.

At this time I would like to turn the rest of the presentation over to Mr. Tavares to deal with the combat system.

STATEMENT OF RALPH TAVARES

COMBAT SYSTEM

Mr. TAVARES. Mr. Chairman, at this time I would like to address our final two concerns relating to the fiscal year 1989 combat system. The first relates to simultaneous development efforts. The *Seawolf*'s construction schedule is driving the development and production schedule of its combat system. The combat system is critical to the *Seawolf*'s achieving its full capabilities and mission requirements.

The Navy believes that implementing the combat system program is a medium-schedule risk. However, this program could be a high risk because of the large quantity of software that will be required for system development. Although the Navy has 6 years to develop, test, integrate, and deliver the combat system software, it still must be considered an ambitious program when compared to the *Los Angeles*' combat system software which requires about half as much software as the fiscal year 1989 combat system, and will take about 5 years to develop.

In commenting on the software for the SUBACS program, the Naval Underwater Systems Center's technical director advised the Navy that there were basically two critical issues when it comes to developing software, and I would just like to read from that statement. It says, "The required software development is the most ambitious program ever attempted on the basis of sheer size, about 1.3 million lines of source codes for the SUBACS basic program alone"—the fiscal year 1989 combat system will require at least twice as much software coding—"and because scheduled times to complete development have never been achieved in any other comparable development program to date."

The other important issue with regard to software is software integration with acoustics and combat controls together. In that regard, the technical director says "combat system integration which has proven to be the Achilles heel of most recent large system developments is grossly underplanned." Once again, past experience has shown that the planned time for this phase of system integration has never been achieved. This was in relation to the SUBACS program, a much smaller program than the fiscal year 1989 combat system.

In recognition of the 1989 combat system's large software requirements and that it involves implementing an ambitious schedule, the Navy has taken action to mitigate risks. For example, the Navy is planning to provide the contractors with equipment and processes so that they can begin developing software earlier than with previous combat systems, and is requiring the contractors to submit risk mitigation plans.

Our final concern relates to concurrency. To meet the *Seawolf's* construction schedule, the first fiscal year 1989 combat system must be delivered to the shipyard November 1993. As a result, this will require concurrent development and limited production. Current program plans show that by the time the first *Seawolf* completes its operational test and evaluation in November 1995, the Navy will have delivered two engineering development models, all trainers, and two production models.

The Navy recognizes that there is a risk associated with limited flexibility of this approach, but contends there is no alternative because the combat system development and its delivery schedule are being driven by the ship construction schedule. As a result, there is a high risk that the first *Seawolf* may not achieve full tactical performance capabilities when first delivered to the Navy.

Now the advantages of concurrently developing and producing a combat system is that the system can be developed and delivered earlier than normal. The disadvantage of concurrency is that if a technical problem arises in developing the first combat system, those problems will affect subsequent systems until the problems have been fixed.

Mr. Chairman, this concludes our prepared remarks, and we will be pleased to respond to any questions you may have at this time.

[The prepared statement of Mr. Landicho follows:]

PREPARED STATEMENT OF JOHN LANDICHO

Senior Associate Director
National Security and International Affairs Division

Mr. Chairman and Members of the Subcommittee:

I am pleased to appear before the Subcommittee today to discuss the status of:

-- the Navy's new Seawolf attack submarine (SSN-21) construction program, and

-- development of the Seawolf's new combat system[1].

We have been monitoring these programs as well as their predecessor programs -- the improved Los Angeles (SSN-688) class submarine and its combat system.

SSN-21 ATTACK SUBMARINE (SEAWOLF) -- BACKGROUND

The Navy's new Seawolf attack submarine is being designed to counter Soviet submarine capability advances. The submarine's expanded missions will include antisubmarine and antisurface ship warfare as well as strike warfare, surveillance, and mine warfare. The Navy states that the currently deployed Los Angeles class submarines cannot adequately meet the expanded mission for attack submarines. The Seawolf program was solely in the Research, Development, Test, and Engineering (RDT&E) stage until fiscal year 1987 when Congress first appropriated advance procurement funds.

Costs

The costs associated with the multipurpose Seawolf submarine are significant. By the year 2000, the Navy plans to request authority to build at least 28 of these submarines for a total estimated procurement cost of $29 billion (fiscal year 1985 dollars). Life cycle costs are estimated to total approximately $32.7 billion

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[1] A submarine combat system detects, classifies, tracks, and destroys enemy targets. The major subsystems of a combat system are: acoustics (sensors) and combat control (fire control and weapons launch).

(fiscal year 1985 dollars) through 1999. These costs include estimates for military construction, personnel, operations and maintenance, but exclude RDT&E costs for the combat system, related electronics costs, and weapons.

The Navy imposed a construction cost cap of $1.6 billion on the first submarine and a cost cap of $1.0 billion on the fifth ship (in fiscal year 1985 dollars). Although a cost cap was not placed on the second, third, and fourth ships, costs are expected to steadily decline to $1 billion per ship by the fifth ship. This is nearly double the current cost of a Los Angeles submarine. According to the most recent budget estimates, Navy will need SCN funds of $1.8 billion including outfitting and post delivery costs (or $1.5 billion in fiscal year 1985 dollars) to build the lead ship.

The Navy, at congressional direction, also plans to establish two cost caps on total RDT&E costs--one for the Seawolf hull, mechanics, and electronic, and another on the combat system program. The cap excludes nuclear components and contract design. Although the amount of the cap is still being considered by the Navy, RDT&E base year cost estimates for the two programs are $2.6 billion for the platform and $1.6 billion (in fiscal year 1986 dollars) for the combat system.

Schedule

The Newport News Shipyard began detailed design in January 1987 and it is expected to last 4 years. The Navy plans to complete and validate approximately 80 percent of the detailed design drawings before awarding the lead ship construction contract in November 1988. Validation is to be accomplished through program reviews, incremental testing of subcomponents and scale model mockups. The first ship is scheduled to be delivered to the Navy in November 1994.

The Navy plans to request authority to buy the second and third ships in fiscal year 1991, the fourth and fifth ships in fiscal year 1992, and the sixth, seventh, and eighth ships in 1993. The construction contract award for the second ship is planned for November 1990. Through 1999, if the Navy's plan is executed, 28 Seawolf submarines will have been authorized with 12 delivered.

Performance

The Navy maintains that the attack submarine force has a key role in successfully accomplishing the Maritime Strategy. The Navy also maintains it needs a minimum of 100 attack submarines to effectively accomplish this mission, and must build an average of 3 1/3 nuclear attack submarines per year to counter the increasing Soviet threat. The Navy designed the Seawolf to be quieter, tactically faster, deeper diving, and able to carry more weapons than the current Los Angeles class, which the Navy says no longer has any growth potential. To support the Maritime Strategy, the Seawolf will have an expanded mission which includes deploying into forward ocean areas to seek out and destroy Soviet strategic missile submarines and surface ships, to lay mines, and to attack land targets.

Program officials have told us that current RDT&E efforts indicate that the Seawolf non-nuclear components will probably achieve planned silencing capabilities as defined in the Top-Level Requirements (TLR). However, while most of the SSN-21 nuclear technology has been tried and tested, officials indicate it may be too soon to verify whether nuclear components will achieve planned silencing thresholds because noise generation is difficult to measure. Currently, both nuclear and non-nuclear subcomponents are primarily tested individually. Multi-component tests are not planned until the early to mid 1990s.

FISCAL YEAR 1989
COMBAT SYSTEM (FY89CS)--BACKGROUND

To counter the Soviet Anti-Submarine Warfare threat, the Navy is developing a new combat system for the Seawolf submarine. The combat system is expected to improve response times, operability and firepower through system improvements such as computer-aided detection, classification, and tracking. This will be accomplished by using a wide aperture array (WAA)[2] and enhanced information management. The Navy is planning to provide Seawolf and Los Angeles class submarines (authorized in fiscal year 1989 and beyond) with WAA capability. Although the combat system design is not yet finalized, the system is expected to consist of hardware and software from the Los Angeles submarine's combat system and new components and software. Currently, the Seawolf's combat system is in design definition phase of development.

Cost

The Navy estimates total acquisition costs for the combat system to be about $7.3 billion -- $1.6 billion for RDT&E and $5.7 billion for procurement. This estimate includes the costs of 28 combat systems, all spares, trainers and shore sites. (It also includes eight WAAs to be installed on Los Angeles class submarines authorized in fiscal year 1989 and beyond.) The International Business Machine Corporation (IBM) and the Radio Corporation of America (RCA) are competing for the Seawolf combat system's full-scale development contract. Both contractors are developing system designs and cost proposals. They are not scheduled to be submitted to the Navy until July 1987. As a result, the adequacy of funding estimates will not be known until the contractors' system design and cost proposals are evaluated, probably by September 1987.

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[2] A wide aperture array is a passive sensor that will be mounted on the hull of SSN-21 submarines and SSN-688 submarines authorized in fiscal year 1989 and beyond. It is expected to provide enhanced capabilities over previous combat systems by determining the locations of targets faster, and by providing more accurate target range and target motion analysis.

The Navy's research, development, test, and evaluation costs estimate of $1.6 billion (fiscal year 1986 dollars), includes $255 million for development of combat system software. Since the software estimate was prepared, a program official estimates that the combat system will require about 4.2 million lines of software of which about 2.5 million lines will have to be newly developed. In discussions with Naval Underwater System Center officials, we were informed that it could cost about $300 per line to develop, fully document, and test a new line of software, which could mean that the cost of this new software alone could be about $750 million. The remaining 1.7 million lines of software will either be retained and/or modified from previous combat systems. A more precise amount of the new or modified software that will be required to implement the program will not be known until the contractors submit system proposals in July 1987.

Schedule

RCA and IBM were awarded contracts for the system design definition phase in January and March 1986, respectively. A request for system proposals was issued on February 18, 1987, to the two contractors for development hardware, a weapons launch trainer, and a basic operator trainer. Options are also included for 3 combat systems, a land based engineering system, a maintenance trainer, and 6 WAAs for SSN-688 class submarines authorized during fiscal year 1989 through 1991. Proposals are due back to the Navy on July 6, 1987. The Navy, in January 1988, plans to award to either IBM or RCA a fixed price contract for the full-scale development of the FY89CS, with options for limited production to support the fiscal years 1989 through 1991 requirements.

The successful contractor (leader) will perform most of the full-scale development and limited production effort, including system hardware and software for acoustics, combat control, displays, and WAAs. The contractor not selected (follower) will perform at least

15 percent of the full-scale development/limited production contract, including some portion of the tactical combat systems and one WAA system. The leader contract will include incentives and an award fee pool. The incentives are a 50-50 percent saving share line between the government and the contractor for development and production. Funds awarded in the fee pool are to be based on how the leader is: (1) educating the follower, (2) meeting design to cost goals, and (3) managing the program, particularly its subcontractors. The first combat system is scheduled to begin system testing and integration in about October 1991 and be delivered to a shipyard in November 1993. The first SSN-21 is scheduled for delivery 1 year later, in November 1994.

The Navy plans to issue a subsequent follow-on limited production fixed price contract from fiscal year 1992 through fiscal year 1995. This contract is required because planned procurements will be concurrent with development of the combat system. The first full production acquisition of the FY89CS is expected in fiscal year 1996.

Performance

Program officials are concerned that contractors' proposals will not contain all performance capabilities required in the combat system's specifications, called the Prime Item Development Specifications (PIDS). The Deputy Program Manager is confident that both contractors will submit proposals that provide all war fighting capabilities within cost and on schedule. However, the extent of total system capabilities will not be known until the contractors submit their proposals in July 1987.

AREAS OF CONCERN

Both of these major programs are important to the Navy and like other weapon system programs of similar magnitude there are issues associated with them. We have, identified the following four areas of concern that we (1) plan to continue to monitor on both the Seawolf and combat system programs, and (2) believe will require Navy management attention.

-- Seawolf's affordability,

-- Seawolf construction techniques,

-- simultaneous development efforts, and

-- concurrency within the combat system program.

Affordability

In an austere budget climate, the cost of the Seawolf has affordability implications. Recently, the Navy was of the view that the cost of these submarines would not rise "much more" than historical attack submarine acquisition costs of about 20 percent of the Navy's ship construction budget. The Navy now feels it can limit Seawolf production costs to about 26 percent of the ship construction budget, assuming annual real growth in that budget of 2 percent. If the Navy builds an average of 3 1/3 Seawolfs a year within the cost cap as planned, the cost of these submarines, with an average annual appropriation of about $11 billion (fiscal year 1987 dollars), could represent as much as 32 percent of the Navy's ship construction budget. If costs increase above the estimates or if real budget growth falls below 2 percent, then their percentage could be even higher.

The costs associated with the Seawolf raise concerns about the budgetary impact it will have on both the attack submarine force and the 600-ship Navy. Although the Secretary of the Navy capped acquisition costs of the Seawolf at $1 billion (1985 dollars) for the fifth through 28th ship, this figure represents a significant increase over Los Angeles submarine costs. If the Navy is unable to stay within the cost cap and/or there is no real growth in the budget, the Navy's ability to reach and maintain the 600-ship Navy and/or the 100 nuclear attack submarines portion of that force would be strained and the Navy would be faced with force structure "trade-off" decisions.

Modular Construction Techniques

The Seawolf will be built using modular construction techniques in lieu of traditional "hull-up" construction techniques. One of the major differences between these techniques is the degree of completeness that the detailed design must have before fabrication begins. Under the modularization technique, most of the detailed design must be completed and validated before fabrication begins, including configuration data on system and subsystem designs. These detailed drawings must be accurate even down to pipe and cabling runs. Once the drawings are complete, they should be validated to make sure the boxes fit, electrical connections and pipe runs meet where they are supposed to so as to avoid ship or system modification. If they don't, then problems, similar to those being experienced in the improved Los Angeles submarine construction program, could surface during fabrication.

The Navy has allowed 4 years for the detailed design phase. Initially, detail design was scheduled to begin in October 1986, but did not start until January 1987. Under current plans, the Navy intends to have approximately 80 percent of the detailed design complete before fabrication begins. These drawings will be validated through incremental testing of subcomponents, program review, and construction of scale model mockups. It is important that the Navy adhere to its planned course of action. On the improved Los Angeles submarine program, because of cost, the construction of the mockup was halted, the drawings were not validated and construction problems ensued.

Simultaneous Development Efforts

The Seawolf's construction schedule is driving the development and production schedule of its combat system. According to DOD and

Navy officials, the combat system is critical to the Seawolf achieving it full combat capabilities and mission requirements. Its predecessor, the Los Angeles submarine combat system, cannot be used on the Seawolf without major hardware and software upgrades because of differences in ship sensor capabilities, data processing requirements, and weapons and weapons launch integration. Because the SSN-21 will be constructed using modular construction techniques, a larger percentage of the detailed drawings must be completed sooner and earlier delivery of certain equipment, such as bow arrays, and information will be required than would be the case under traditional construction techniques. The dates this equipment and information is needed by the shipbuilder, and when it can be made available by the Navy, is currently under negotiation between the Navy and the ship designers.

The Seawolf combat system is in the early stages of development. Top level requirements and specifications have been drafted defining what the system must do to counter the threat. However, the system design will not be definitized until contractor proposals have been received in July 1987, the Navy reviews and evaluates those proposals, and awards a full-scale development contract.

The Navy believes that implementing the combat system program is a medium schedule risk. However, as currently scheduled, this program could be a high risk because of the large quantity of software that will be required for system development.

Under the Los Angeles' combat system program, the time required for software development and integration was underestimated. The combat system was originally scheduled to have total system software when delivered to the shipbuilder in May 1987, approximately 4 years after full-scale development began. Due to the complexity of the combat system, and cost schedule and performance problems during its development, total software will not be delivered until at least September 1988, more than 1 year later than planned. Under the Seawolf's combat system program, the Navy has an additional year, or 6 years to develop, test, integrate, and deliver nearly twice the amount of software. In recognition that implementing the Seawolf's combat system is an ambitious schedule and will require a large quantity of software, planning to provide the contractors with software development equipment and processors so that they can begin developing software earlier than with previous combat systems, and is requiring the contractor's to submit risk mitigation plans.

Concurrency

To meet the Seawolf's construction schedule, the first combat system must be delivered to the shipyard in November 1993. Navy program documentation shows that this combat system program, like the previous combat system program, will require concurrent development and limited production in order to meet required system delivery schedules. For example, the Program Guidance and Assumptions, dated May 9, 1986, shows the full-scale development phase extending into fiscal year 1996, with system deliveries beginning in November 1993. Under this schedule, by the time the first Seawolf completes its operational test and evaluation in November 1995 the Navy will have delivered

-- two engineering development models,
-- all trainers, and
-- two production models.

The Navy recognizes that there is a risk associated with the limited flexibility of this approach, but contends there is no alternative because the combat system's development and its delivery schedule are being driven by the ship construction schedule. As a result, there is a high risk that the first Seawolf may not achieve full tactical performance capabilities when first delivered to the Navy. In fact, an April 2, 1986, Navy memorandum stated that some operability improvements may be delivered without sea validation and some will be delayed requiring further development and modification.

The advantage to concurrently developing and producing a combat system is that the system can be developed and delivered earlier. The disadvantage is that if technical problems have not been resolved, then all subsequent systems will have similar problems until they are fixed.

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Mr. Chairman this concludes my prepared remarks and I would be pleased to respond to any questions you might have.

Senator **Kennedy**. I would like to ask the Admiral if he would come back up. Would you gentlemen move over a little bit so we have all of you, because I think there will be some questions that will relate to both the presentations. We will ask the staff to follow the 6-minute rule.

Admiral, you heard the points that were made by the General Accounting Office. As I understand, one of the points is the new system required twice as much new software as the previous system, yet the development schedule was only 1 year longer, 6 years versus the 5 for the old system. As I understand, we are currently having some problems with the combat system for the improved SSN-688 in the first place.

Given the fact that you have this issue of concurrency, the initial production of the combat system concurrent with the latter stages of the development, obviously the risk of that strategy is if problems arise during the end of the development it will be too late to correct the first production models, which would lead to expensive refits.

So it is complicated. There are risks. It would appear that at least some of these might be able to be worked out with a somewhat greater period of time, but you have to balance that against what the nature of the threat is on the other side.

Why do you think we ought to be willing to take that type of a chance, given what the dangers are in terms of the potential additional cost? First of all, what is the security urgency that we would face if we let this go for another year.

Admiral **DeMars**. When we get into the classified part, I think we can show you more clearly what the risk of delay is because of the momentum of being 5 years into a 12-year development program where you have thousands of engineers and thousands of contracts with sub-vendors and so on, in place right now and all working. If we were to stretch that out for a year, it would be a great waste of money, resources and momentum, because you cannot just turn the burner down, as I know you understand, and turn it back up.

If it were necessary to do that, we obviously would do it. It is absolutely not necessary, though. Some of the quotes that the GAO read I agree with, but they are from 3 years ago. Those were quotes by the Technical Director of NUSC 3 years ago when in fact we had serious problems in our combat system development. That is why we restructured SUBACS. We in fact discontinued the program and came up with a two-phased program. The first is the BSY-1 program which delivers to the 688 class of submarines, and the second is the fiscal year 1989 combat system which delivers to the new submarine.

We are tracking now on our delivery of BSY-1 to the 688 class submarines. I think last year when I testified I said that the first time that you could check on the validity of what we were telling you would be May of this year, when the combat system would be ready for delivery to Electric Boat Co.

I was out at IBM in Manassas about 3 weeks ago, and the combat system was there, hooked together, and operating and it will be ready for turnover to Electric Boat in May of this year, as we said. We had some combat system problems about 3 years ago, but we learned from that. We restructured our approach and we mitigated the risk, and we have fallen back into a more proven way of developing it.

So while I agree with some of their statements, I think they are a bit dated.

Senator KENNEDY. I understand they have not varied in terms of their conclusions on the GAO report. We are not interested so much in just the quotes of their central conclusions and concerns about the additional complexities of the combat system, given the time development only 1 year longer than the 688, and given the fact that you are going to have concurrency, whether we are going to be asked to really roll the dice and be around here in another several years and find out that it is going to be a lot more costly and a lot more expensive when some of these uncertainties could have been worked out.

Admiral DEMARS. No, sir. As I showed you in my presentation, the array parts of the combat system are at sea today and playing in real-world operations. The hardware, because of the dollars we have available, will consist largely of Navy standard and proven components, and the system development requires that that hardware be available in 1991.

The challenge as it always is, is software. But we have taken a new approach to compartmenting and modularizing our software so we work on the most difficult parts first, and it does not all have to stay totally integrated. We have required the contractors when they come in with their proposals to provide for risk mitigation if we have software problems. We repeatedly ask, "what are our fallback positions and at what point should we go to these fallback positions?"

PASSIVE AND ACTIVE SONAR

Senator **Kennedy**. Let me go quickly into another area. This is the area about the passive and active sonar, the various effectiveness of those different technologies. We have seen Assistant Secretary Paisley last week in the New York Times who was quoted as saying the passive sonar like that in the SSN–21 may no longer be effective, and goes on to suggest that we may have to rely more heavily on the active sonar, and were we to move to a primary reliance on active to find Soviet submarines, would much of the SSN–21's investment in quietness be wasted?

Admiral **DeMars**. I think possibly Mr. Paisley was talking in a different context than specifically submarines. He was referring to use of active sonar in open ocean ASW. Submarines of course are in their prime when they are operating in enemy waters where no other vessels can operate, and there the premium is on stealth and use of passive sonar.

We predict that we will be able to continue to use passive sonar for a couple of decades. We obviously hedge our bet by having a very fine active sonar in today's submarines, and will continue to improve that active sonar in the SSN–21. So that if the quieting situation gets to that point, we still have an active sonar that we can use.

But I think that is a number of years away.

Senator **Kennedy**. Well, my time has expired.

Senator Warner.

Senator **Warner**. Mr. Chairman, is it possible, even though I was here first, to defer to Senator Cohen.

Senator **Cohen**. I just have a couple of questions.

SSN–21

I am just kind of curious as I listen to the debate on the SSN–21. Initially we were told that surface ships were obsolete, therefore we should not build any more aircraft carriers or other surface ships because they are subject to an attack from Backfire bombers. That was raised several years ago.

The argument was we actually need more submarines. So we started to build more submarines, but they say not this submarine because we have not had enough outside consultations. As I recall, that was the cry about three years ago. We did not have enough so-called outside input into the design of the SSN–21.

Then after meeting that particular objection, it became well, the cost is too much, and by the way you have got developmental difficulties. So it seems that this particular submarine, the birth of this submarine, has come through a number of stages and we are now at the point where we do have to make a rather fundamental choice as to whether we are going to stretch this out further to accommodate whatever objections GAO or others might raise against the submarine.

But I would ask, Admiral, are you confortable with this ship taking 32 percent of the shipbuilding construction? And is the Secretary of the Navy comfortable, and the Secretary of Defense?

Admiral **DeMars**. Well, sir, I am not privy to that particular analysis because they have not provided it to us. I do not know what assumptions they made about potential cost growth in the submarine program, which I of course would not accept. I do not know what inflationary estimates they made, and so on.

I have not been privy to that information. The Navy feels that this submarine is affordable in the context of the Navy that we intend for the future or obviously it would not have continued on for the past five years. It has gone through that debate both in the Navy milestone meetings, in the Secretary of Defense milestone meetings, and it was found to be appropriate in the context of the rest of the Navy.

COMBAT SYSTEMS ON IMPROVED 688

Senator **Cohen**. You indicated during the rest of your presentation that most of the same combat systems of the improved 688 will be on this ship, as well?

Admiral **DeMars**. No, sir. I do not think I said that. I think I said we were testing at sea today many of the arrays the thin-line towed arrays, wide aperture arrays, prototypes and engineering developmental models. This process will essentially prove out the concepts so that we know that we have reasonably proven hardware, but will not be exactly the same in all cases.

In fact, the point that is usually overlooked is that the reason the combat system will be so good is because of the significant quieting of the submarine and the high tactical speed of the submarine. The submarine itself, which Admiral McKee will describe in greater detail in the closed session here, the quality of the submarine contributes significantly to the combat system.

Senator **Cohen**. What comparability in logic is there that you pointed out for example that you now have in the improved 688 something that 5 years ago was not even on the drawing boards to the question about your technical capability of going forward on this time schedule and meeting the time constraints?

Admiral **DeMars**. That is because possibly we did not focus enough in the 688 area. We picked the authorization year for the new submarine after considerable study about what R&D would mature in the particular time frame we were looking at. We picked the authorization year of 1989 such that we were not going too soon that we would miss good opportunities that would come on a couple of years later, and that we were not waiting too long for things that would not mature.

That particular year was picked with full knowledge of what R&D was coming along, and what we could bring in at the time, and it was picked to optimize what developments would be available.

Senator **Cohen**. Just one final question. You showed a chart which indicated that in the year 2000 and beyond we are back up to three gold stars and three blue checks in the quality area.

Admiral **DeMars**. Blue.

Senator **Cohen**. Pardon?

Admiral **DeMars**. Blue.

Senator **Cohen**. Gold stars, blue checks. How comfortable are you with that assessment? In looking at the chart where you have got the Soviet force, you said they have a very aggressive construction program underway. As I read your chart, they have got about 154 subs versus 54 United States, and you are projecting 15 years into the future as to what they will have at that time in terms of their so-called robust construction program, and the fact that the Navy was taken completely by surprise back in 1981 with the deployment of the *Mike,* as I recall at that time.

You had anticipated that they might have one new class. They came out with three in a very short period of time, and had no advance intelligence with the *Mike* class whatsoever, as I recall at that time. How comfortable are you with those projections that as soon as we construct this ship that by the year 2000 we are back to three blue checks?

Admiral DEMARS. Yes, sir. I am very comfortable because, as I said, we have been unable to justify building a submarine for 19 years by the time this one goes to sea. The ability to start fresh with a new hull form, a completely new propulsion plant, and be unconstrained with fitting your improvements into today's existing hull gives you a tremendous increase in capability.

Senator KENNEDY. Senator Stennis.

Senator STENNIS. I pass at this time.

Senator KENNEDY. Senator Exon.

Senator EXON. I will pass at this time. I wanted to hear the rest of the questions. I am sorry I had to come in late, Mr. Chairman.

Senator KENNEDY. Senator Levin.

Senator LEVIN. I have an opening statement which I submitted for the record relative to these joint hearings with Senator Kennedy.

I think it is an important initiative that the chairman has taken here to bring us together on this tremendous commitment, and a worthwhile one. It is a questioning of timing, not whether or not we need to do this. That is an issue that is not an easy issue to tackle. We clearly need a new sub.

SSN-21

I would like to just ask you, Admiral, about some of your assumptions. You say in your assumptions that the Navy plans to build an average of 3.5 SSN-21's per year over the life of the program. That is an average annual appropriation of about $11 billion per year.

You have assumed in that an annual real growth of 2 percent in order to keep the production costs where they are. My question is: Do you assume the same real growth in this program as the Navy has for the balance of its shipbuilding program? Is this an across-the-Navy assumption?

Admiral DEMARS. I am not an expert on that, Senator, but I think we are essentially in the ballpark with what the Navy estimates as real program growth in shipbuilding.

Senator LEVIN. Would you check that out for us for the record and give us that?

Admiral DEMARS. Yes, I will.

Senator LEVIN. Is that a figure that the Navy gives you to assume, or do you pick it up yourself?

Admiral DEMARS. I will have to get that for the record.

[The information follows:]

SUBMARINE COST

The Navy plans to build an average of 3.3 SSN-21's per year over the life of the program. As recently certified to Congress, the program remains within the SECNAV cost goals of $1.0B (FY 85$) for the fifth and follow ships, requiring an average yearly appropriation of less than $3.3B (FY 85$). The SECNAV cost ceiling allows no real growth in the SSN-21 program. Program cost estimates in then year dollars utilize the current OSD approved inflation indices which is the same for all ships within the Navy's shipbuilding program.

Senator **LEVIN**. That is a pretty critical assumption.

Admiral **DEMARS**. But the main point is, we require this submarine to meet the threat, and if other budgetary things came into play, then we would have to adjust accordingly either the mix in the Navy or the submarine force level, or our strategy, and so on. But our evaluation is that this submarine is required to meet the threat.

Senator **LEVIN**. Have you calculated the likely cost of any stretchouts in this program in the future if you cannot afford to build those 3.5 submarines a year? We are finding that almost every major program that we are involved in now is being stretched out over what we originally contemplated. Have you looked and calculated, just simply have you calculated what it would cost us to build three submarines a year, or 2.5 submarines a year in the outyears? Have you done those calculations?

Admiral **DEMARS**. Yes, sir. They are fairly simple calculations.

Senator **LEVIN**. Would you submit those, also?

Admiral **DEMARS**. Yes, sir.

[The information follows:]

SUBMARINE CONSTRUCTION COST

To build three submarines a year would cost us $3 billion per year and to build 2.5 submarines a year would cost us $2.5 billion per year (FY 85$). To get the cost in then year dollars would be a simple matter of applying the correct inflation factor. This assumes no economies of scale. Also 2.5 per year is not enough to sustain a 100 SSN force (assuming 30 year life).

SOFTWARE DEVELOPMENT

Senator **LEVIN**. Now one of the things the GAO has said is that in discussions with the Naval Underwater Systems Center officials, that they were informed it could cost about $300 per line to develop, fully document, and test a new line of software which as I understand it has hundreds of thousands, or millions of lines, which could mean that the cost of the new software alone could be about $750 million. Now this is the GAO speaking after interviewing the Naval Underwater Systems Center.

The GAO says that your R&D estimate does not include $750 million, but only $255 million for software development, about one-third of what they would project that you would need based on those conversations for the development of the combat system. Can you comment on that?

Admiral **DEMARS**. I can, but not very well, because some of the comments I have heard the GAO make, as I said, are from about three years ago when we had some very serious problems in our combat system development, and quite frankly we were launched off in the wrong direction with our combat system architecture.

We since have made a significant change in the way we are architecturing our combat system, and we have brought in the BSY-1 Combat System which as I said would be available in many of those 688 class submarines on budget and on specification with a different architecture that does not require as much software and as much money. We are using that same approach and have designed the cost effort for the new submarine. So the risk has been significantly reduced.

Senator LEVIN. I am wondering if the GAO might comment. Are your comments current to the new architecture?

Mr. TAVARES. Yes, Mr. Chairman, they are. The question, when asked about the $300 per line, was restricted only to the development of the fiscal year 1989 combat system. I have since——

Senator LEVIN. Fully what? I did not follow you. Restricted to what?

Mr. TAVARES. Only to the cost of the fiscal year 1989 combat system. I have since gone back to NUSC and asked them if they would stand by that figure, and they said they would.

Senator LEVIN. Now that is a pretty major discrepancy there between $250 million and $750 million.

Admiral, do you have any further comment?

Admiral DEMARS. No, sir. I was not privy to their testimony before they came, and so I have difficulty commenting on some of the details of it.

I would say, though, that the new combat system is made up of old software that already exists, old modified software, and new software. So that it is not all new software. We feel that the risk is moderate to bring this combat system in.

Senator LEVIN. I think the GAO did note all that in their report. I think if you have any further comment on that, or any of your colleagues from the Navy do, that it would be useful to get that to us for the record.

Admiral DEMARS. Yes, sir.

[The information follows:]

FISCAL YEAR 1989 SUBMARINE COMBAT SYSTEM BSY-2

The estimation of software development cost is complex. "Cost per line of code" rules of thumb insufficient to properly estimate software costs. Estimates must consider; software requirements, hardware/software architecture, computer language utilized, software development environment, documentation requirements, test requirements, hardware availability, retained/modified software, contractor personnel experience, amount of code, stability of performance requirements, maturity of the development tools, available schedule and labor rates.

The $255M R&D software development cost identified by GAO is not correct. It includes only detail design, code and program test. It does not include system engineering, system test and integration, integrated logistics support and data. The correct Navy estimate is $450M. This estimate does not include contractor test equipment and development facility capitalization costs of $50M.

Senator LEVIN. GAO quoted somebody a few minutes ago, and I did not quite follow who you were quoting, about system integration being grossly underfunded. Who were those words from?

Mr. TAVARES. Those words were from the Technical Director of the Naval Underwater Systems Center in Newport, Rhode Island.

Senator **Levin**. And how many months or years ago was that statement made?

Mr. **Tavares**. This was made, the letter was dated January 21, 1985.

Senator **Levin**. Now has there not been a lot of water over the hull since then?

Mr. **Tavares**. This data related to the basic SUBACS program, but we feel that these conditions will exist regardless, no matter what the program, if it is the 1989 Combat System or the BSY-1 Program, because traditionally these two problems will occur.

Senator **Levin**. Would you check back with them to see if those comments will change, and let us know?

Mr. **Tavares**. Yes, sir, I would be happy to.

[The information follows:]

According to the technical director, NUSC, the fiscal year 1989 Combat System is not more technically complex than the SUBACS basic combat system program. In his view, the fiscal year 1989 Combat System program has been explicitly structured to avoid the technical complexities that existed in the SUBACS program. The performance requirements established for the fiscal year 1989 Combat System program do not require the use of overly complicated or immature technology. To date, there has been considerable interaction between the two contractor teams and the Navy. One of the objectives of this interaction has been to ensure that performance requirements can be met with mature technology.

With respect to the comparison between the SUBACS and fiscal year 1989 Combat System software development and combat system integration. The initial concerns in these areas were directly related to a number of factors. These factors included the stability of the requirements for the program, the type of contract utilized, schedule available, the systems architecture approach, the number of facilities available, the availability of hardware, the maturity of the technology, the amount of existing hardware that was utilized and the amount of existing software that was utilized. As expressed above, the fiscal year 1989 Combat System program does not require the use of immature overly complicated technology. In all the other areas, the fiscal year 1989 Combat System is a very different program than the SUBACs program. The Navy has instituted various initiatives within the fiscal year 1989 Combat System program to ensure that the risk associated with software development, combat system integration and system testing is acceptable.

Senator **Levin**. My time is up.

Senator **Kennedy**. Senator Warner.

Senator **Warner**. Thank you, Mr. Chairman.

Mr. Chairman, members of the committee, and our witnesses today, my first question builds on the foundation established by Mr. Cohen. In just broad generalities, I have been privileged to be a member of this committee now 8 years, and I have sat here and listened to that B-1 story day after day, year after year, and now we are faced with the problems which we all read about.

COMPARING B-1 AND SSN-21 PROGRAMS

I want to just ask in general to the GAO, do you see certain parallel problems with the B-1 and this program at this stage? We have got egg all over our face, the Department of Defense, Congress, and everything else over this B-1, and I do not know where it is going to unravel or how we are going to solve it.

But as strongly as I am in favor of going ahead with this new submarine—indeed, my State is heavily involved—we do not want to participate certainly in another situation like we have got in the B-1. So in broad generalities, do you see the same basic problems that we are seeing today in the B-1 beginning in this program?

Mr. **Landicho**. Senator Warner, we have internally within GAO discussed this, the B-1 and the SSN-21, and what we feel is that with any large program—the B-1 is certainly a large program and the *Seawolf* is a large program—there always will be problems.

Again, the sentiment of the staff in prosecuting this work, and by the way this work is in fact ongoing, is that perhaps the procurement of the SSN-21 ought to be delayed in favor of great research and development efforts, particularly on the combat system and what was just pointed out in terms of the software area.

So where we are coming out on this is saying, yes, in any large program there are problems——

Senator **Warner**. Well, we all know that. My specific question is, you have analyzed B-1. You have given your reports, and we have seen the results today. Do you see presently in this program the same incipient options for getting into that B-1 situation?

Mr. **Landicho**. I do not think we will find an identical kind of comparison, Senator.

Senator **Warner**. Well, are there certain parallels?

Mr. **Landicho**. The parallel that might be is that are we ready to go forward? The sentiment of the staff is saying no, we do not think it is ready to go forward, particularly in terms of the procurement action, and there should be perhaps greater research and development efforts particularly on the combat system.

We were thinking perhaps another way to go about this, and what we said on the B-1 program, I believe in our testimony and in our report, is that before moving forward perhaps a certification on the part of the Secretary of Defense might be appropriate certifying to the fact that the cost problems and technical problems have been dealt with before moving forward.

Senator **Warner**. If we start getting certification from SECDEF, we would just have to on every program get six or eight of them. I mean, that is supposed to be his fundamental job, when he comes before the Congress saying we are ready to go forward. We should not get a certification out of him.

Well, let me ask the Navy. You studied the B-1 program. Do you see that you are going to avoid those pitfalls?

Admiral **DeMars**. Senator, no, I have not studied the B-1 program.

Senator **Warner**. You have, or have not?

Admiral **DeMars**. Have not, sir. But we feel the risk is moderate, and the riskiest part of our development of this submarine is not the combat system. I think in the closed testimony Admiral McKee and I can show you where we think the real risk lies in development of this submarine.

Senator **Warner**. Well, I will write the head of the GAO on this B-1 thing and ask him, in a simple analysis, does he see any problems? Because we know what we got from the B-1, and we are not sure what we have here. We have got to make the decision and it is very difficult for us, given the time and our technical backgrounds, to make such a serious decision as currently is being presented.

Now Admiral, I am perplexed that we are here at this point in the SSN-21 program beginning to be concerned about concurrency. I mean, we have been looking at the SSN-21 program for how long?

Admiral DEMARS. For 5 years, Senator.

Senator WARNER. For 5 years. It seems to me that we could have obviated this apparent difference of view between GAO and the Department of the Navy years ago. Why did this develop?

Admiral DEMARS. I do not know, Senator. We have been under almost continuous review by the GAO for about the last 4½ years, and we have provided all the data they have asked for, opened our books——

SOVIET SUBMARINES

Senator WARNER. Let me have another question, then. We see where the Soviets, how many different submarines have they created in this period of time that you gave, about six or seven?

Admiral DEMARS. They have put out seven different classes of attack submarines.

Senator WARNER. All right, I have that fact base. Now given that, how does the United States find itself in the posture of trying to just go ahead with one submarine, and we are here quarreling among ourselves on whether we can or cannot go ahead on the schedule outline? What does that say about our capability to build submarines, and the Soviet capability to build submarines?

Admiral DEMARS. I think it is the view of what submarine superiority is, and how important it is. The Soviets know we have it and what that does for our country, and they want to wrest that away from us. That is why they are moving ahead so aggressively on so many different classes of submarines.

We need to move on with our new submarine.

Senator WARNER. I agree with that. I am just talking about our inherent capability as a nation to start a new submarine program. We are hearing this problem.

Admiral DEMARS. I think the capability is there. It is a question of will that we are arguing. We have been studying launching a new submarine for about the last ten years, and we have had about——

Senator WARNER. Well, let me ask the question a different way. You have seen the results of these new submarines of the Soviets out in their fleets, because they are operational on active duty.

Admiral DEMARS. Yes, sir.

Senator WARNER. From what you can learn, are they having problems with their submarines of the nature that is being discussed here today?

Admiral DEMARS. No, sir. I think they are learning with each one of their submarines, and they are moving ahead, and they are continuing to close the gap.

Senator WARNER. Well, then maybe they can build them better and faster than we can here in the United States.

Admiral DEMARS. I do not think so. Their submarines are still not as good as ours.

Senator WARNER. Thank you. My time is up.

Senator KENNEDY. Senator Exon.

Senator EXON. Mr. Chairman, thank you very much.

I was listening with great interest to my friend from Virginia and his talk about the B-1B. We have been into the B-1B in some detail on the Strategic Subcommittee. I do not buy at face value the criticism by the GAO of the B-1B. We have problems with the B-1B, but I am not sure that we should use that as a basic measuring stick or a guideline as to what we are going to go forward with on new programs, including submarines for the U.S. Navy.

Let me say for the record that while some people are disappointed on some of the performance features of the B-1B, this Senator is not because when I was convinced that we should buy 100 of the B-1B bombers, I never thought that the B-1B would be a penetrator. There are some people that bought it on the grounds that it was.

We had testimony open and closed from the Secretary of Defense that the first B could not penetrate beyond 1981, and beyond that statement came out he corrected that and said it would be in the mid-1990's. I always felt that the B-1B primarily would be used in the interim between the B-52's until the new advanced technology bomber came on line.

I think frankly the GAO did a good job. But I believe very frankly, and if I am wrong please correct me here and now, although this is not a hearing on the B-1B—essentially the problems with the B-1B are basically that it shows up more on radar than we anticipated that it would from its beginning, and primarily that has been brought about by improvements that we did not anticipate on the Soviet side from more detailed and better radar detection.

The B-1B on the hearings that we have held and the visitations that I have made at the factory would indicate that we have some problem with EM on that aircraft, but it still is a very capable aircraft. We have had the crews in. The crews have testified that if they had to carry out a mission internal Soviet Union tomorrow, there is no question that they would prefer to go in the B-1B than in the B-52.

So I simply say that I hope we are not going to measure whether we go ahead on this submarine with the B-1B. But since the question has come up, and I think it is a legitimate point that has been made——

Senator WARNER. The point was simply not to denigrate the B-1, but we had concurrency problems there. Did we learn anything in that program which we can apply to this program?

Senator EXON. I would say to my friend from Virginia that if the armed services have learned anything, they should have learned, and I hope the Navy has learned, not to oversell a program. I think if there is one thing wrong with the B-1B I believe that it became a political matter after it was canceled by President Carter, and I believe that the Air Force came in and overpromised on the B-1B to us and everyone else.

They will not admit that. I thought they were overselling it at the time we approved it, but I still think it is a very effective conventional bomber system, although it will not be an effective penetrator. Is that a fair summation of what the GAO report said on the B-1B?

Mr. LANDICHO. Senator, the program dealing with the B-1B simply is not mine in that I am responsible for the Navy and Marine Corps work. A colleague of mine does handle this program. I do know in a general sense what has occurred in the program for the B-1B, but I am not in a position to respond to the GAO because I do not have those details with me.

Senator **Exon**. Thank you. That is the only comment I have, Mr. Chairman.

Senator **Kennedy**. The Senator from Indiana.

Senator **Thurmond**. South Carolina. Thank you Mr. Chairman.

Senator **Kennedy**. I think under the early-bird rule, I think the Senator from Indiana was first.

Senator **Thurmond**. I yield to the Senator.

SSN-21 VERSUS 688

Senator **Quayle**. I just have a couple of quick questions.

Admiral, I wonder if you might be able to compare for us the capability of the SSN-21 with the 688 on the T-LAM-C and the land attack mission?

Admiral **DeMars**. I think we can do that better when we are in closed session, Senator, but basically it will have a higher capability because it will carry more weapons. We can get into more detail on that in the closed session.

Senator **Quayle**. Is there anything you can tell us about increasing the battle management in open session, particularly with the cruise missiles? I am interested in what we are going to——

Admiral **DeMars**. I think that is best left in closed session.

Senator **Quayle**. Well, I will get into that in closed session.

Thank you, Mr. Chairman.

Senator **Kennedy**. The Senator from South Carolina.

Senator **Thurmond**. Thank you, Mr. Chairman.

COMBAT SYSTEM FOR SSN-21

Admiral DeMars, the combat system being developed for the SSN-21 has come under sharp criticism. As I understand it, that system is an evolutionary system from the one to be used, and the improved *Los Angeles* class attack submarines. What problems have you encountered in the combat system designed for the improved *Los Angeles* class submarines? And how can you apply what is being learned to the development of the combat system for the SSN-21?

Admiral **DeMars**. Yes, Senator. Basically we had a number of problems which we encountered that came to a head about three years ago. We restructured the program at that time and capped it. We sought competition with another contractor, RCA, to compete with IBM, and we have delivered what we said we would in the first combat system to the 688 class submarines. We said it would be ready in May of this year and it will be ready in May of this year.

I think we have learned a lot of lessons. We have incorporated that into both the combat system for the *Los Angeles* class and the system for the SSN-21.

Senator **Thurmond**. Mr. Landicho, the General Accounting Office believes that there is a great level of risk in the development of a combat system for the SSN-21. Can you compare or quantify the level of developmental risk for this combat system with the level of developmental risk of the Aegis system in use by the Navy today?

Mr. LANDICHO. Senator, I would have to put that kind of information for the record.

Senator THURMOND. You want to answer that for the record, did you say?

Mr. LANDICHO. We have not made that conscious comparison between the Aegis system and the SSN-21. So with your permission, I would like to enter that for the record.

Senator THURMOND. You answer that for the record, then.

[The information follows:]

The General Accounting Office has not performed a comparative analysis of the fiscal year 1989 combat system's (FY89CS) developmental risks with that of the Aegis combat system. Until contractor proposals are received in July 1987 and a full scale development contract is awarded in January 1988, the exact configuration and parameters of the FY89CS program will not be known. Nevertheless, there are some system similarities that are worth mentioning. Both the 1989 and Aegis combat systems integrate their ship's fire control, command and control, sensor navigation and communication systems. Both systems are supposed to handle multiple target contacts, prioritize those targets and select the weapon for use against those targets (sea surface and subsurface) to include launching weapons against land targets. The key to both systems is their extensive software packages. The development of the Aegis combat system software was considered high risk. As we have previously testified, in our opinion, the development of the FY89CS software is also high risk.

Senator THURMOND. Admiral DeMars, what is the Navy doing for an alternative should the current system not prove out in the early 1990's?

Admiral DEMARS. As an alternative for the combat system, Senator, we have structured the combat system such that the software deliveries do not all depend upon each other. If we got into problems, which we do not expect, then we would have the ability to add modules of software after the delivery of the ship to give it the full capability. It would not affect the construction of the ship. It would not affect the delivery of the ship to the Navy.

Senator THURMOND. Now Admiral, I believe there are two main objections offered to this program. The first is that it is a very costly submarine. The first one I believe will cost $1.6 billion apiece, with the remainder costing $1 billion apiece.

Do you feel that this is the best way the Defense Department can invest that much money at this time in any particular weapon?

Admiral DEMARS. Yes, sir, Senator. The submarine is the only weapon that can fight in enemy waters with a good chance of surviving and defeating the enemy. Therefore, the submarine has unique characteristics that it brings to the defense of the country that are very valuable. This submarine will allow us to do that in the future against Soviet improvements. It is a unique weapons system, and obviously I feel it is worth the money. It does bring some unique things to the defense of the country.

SOPHISTICATED WEAPONS SYSTEM

Senator THURMOND. Now the second criticism I understood mainly to it concerns the sophisticated weapons system. The submarine is being designed I believe to carry very advanced acoustic detection and data processing capabilities to meet the evolving Soviet threat. There is, however, a large amount of technological risk involved in developing this new capability, because it is quite literally on the leading edge of technology.

Would you care to comment on that?

Admiral **DeMars**. Yes, sir. I do not think it is that much on the leading edge of the technology. The three parts of the combat system, the arrays that are at sea today, the hardware will have to be proven hardware for us to meet our design-to-cost goals, but whichever company wins the contract they will have to draw upon Navy standards, and Navy proven hardware, and hardware that is Government-furnished.

The challenge is in the software. We feel that we have compartmentalized and modularized the software so that we can mitigate the risks should we get into problems. I do not think that in the nature of developmental risks that it lies in this combat system. It lies in some of the other areas of the submarine that I think we can discuss more in closed session.

Senator **Thurmond**. You are convinced then that at this time we are ready to go forward with it, at the expensive cost of it, because we can use the technology available to make the submarine what you feel it should be?

Admiral **DeMars**. Yes, sir, I am.

Senator **Thurmond**. Those are all the questions I have. Thank you, Mr. Chairman.

Senator **Kennedy**. I see that Senator Shelby is here. Would the Senator want to recognize the Senator from Texas?

Senator **Gramm**. Well, Mr. Chairman, I am eager to go into closed session where we can talk about the things that we are all interested in.

Senator **Kennedy**. I think all of us are interested in that. I just had one or two more questions I would like to get brief answers for. I would ask whether you wanted to inquire?

Senator **Gramm**. I will wait until we get into closed session.

Senator **Shelby**. Mr. Chairman, I have been at another committee and I am sorry to come in like this. I have a couple of questions before we go into the other.

COMPARISON OF SSN-21 WITH 688

For my benefit and the committee, would you compare the SSN-21 with the improved 688 in terms of combat systems, any submarine warfare speed, noise, and under-ice capability? I would be interested in how this compares to the Soviet's new, is it the *Akula* class attack submarine?

Admiral **DeMars**. Yes, sir. I think we can handle that better in closed session, because they are sensitive details and we are specifically prepared to do that.

Senator **Shelby**. Well, I would rather do that.

Thank you, Mr. Chairman.

Senator **Kennedy**. I just had a final two questions, or really three, for the GAO.

How do you respond to the fact that, given the kinds of software as well as the hardware, given the lead time, you still talk about 6 years that we are making geometric progress in the whole areas in terms of this type of technology, given the sophisticated kinds of technology which are used in the Aegis and the Stealth, why do you not believe that they can with 6 years, why cannot they have a sufficient catchup to make the deadlines which they have set for themselves?

Mr. **Bigden**. Senator, first of all, the Navy has read over the statement. We sent the statement both through the Platform Project Office and the Combat System Office before we gave it today.

With specific response to your question, we are talking about a different medium here. We are talking about an underwater medium versus a surface medium with the Aegis system. One of the problems that we have, and I am sure the Admiral will get to it in closed session, is that there will be a much higher level of integration on the SSN-21, between its sensors and the combat system versus what exists today on the improved SSN-688 class.

We asked the Navy whether they explored the Aegis system development and are there any lessons to be learned? The Navy's response was that they are totally different, involve totally different development efforts, and therefore there is nothing to compare. So this is the Navy's basis. The fiscal year 1989 combat system is projected to require 4.5 million lines of software with a major portion of it new lines of software. Although the system's hardware may be on schedule, unless the total system software is available when the boat is delivered, the SSN-21 or even the improved SSN-688 class submarines would not necessarily achieve full combat capability. It would be something less.

Mr. **Tavares**. Mr. Chairman.

Senator **Kennedy**. Quickly, because we want to go into closed session.

Mr. **Tavares**. Mr. Chairman, I would just like to expand on the comment that Admiral DeMars made. He was talking about the prior combat system, the 1989 combat system, called the AN/BSY-1. He alludes to the fact that the combat system has been restructured and will be delivered to the Navy in May 1987.

I think it is our responsibility to point out that originally that combat system was supposed to be delivered to the Navy, to the shipyard, in May 1987 with full capabilities. However, because of cost, schedule, and performance problems that first combat system will not achieve full system capabilities until 6 months after it is delivered to the shipyard.

In addition to that, because there is concurrent development in the BSY-1 program as in the fiscal year 1989 combat systems, those similar problems for the first follow-on 688 class submarines are also there.

Senator **Kennedy**. Well, I will leave it up to others. I just have two questions.

One is to the GAO. What can you tell us about concurrency? When we have been purchasing weapons systems that require this type of concurrency, are there just general rule-of-thumb lessons to be learned from that? What can you tell us? Or can you? Or would you want to submit it for the record?

Mr. **Tavares**. I would like to submit that for the record.

Senator **Kennedy**. OK. Well, here is what I am driving at. Are there lessons that you can find from that? If you find there is greater slippage in terms of time, more complexity, are there greater kinds of cost that are associated with it? I would like to get that.

[The information follows:]

Concurrency is not unique to this program, but has been used in past programs and will most likely be used in future programs. The degree to which it is used is a management decision and a willingness to take risks. Concurrency can generally be managed when the risk is low. However, where the risk is high as we believe it is with the fiscal year 1989 combat system, then concurrency must be intensively managed from the start.

Senator KENNEDY. Finally, I would just be interested, Admiral, in anything you would like to add to the record in terms of these questions which we obviously would welcome.

MILITARY PAY

You made an important point, which we have not reached here. That is with regard to the pay of various personnel. We have seen in the past, and we had General Cassidy here, and we were talking about military pay in terms of pilots, aviation career incentive pay has declined, reimbursement of moving expenses.

Now in your testimony you also talk about, under submarine duty incentive pay, no increase since 1980. Value has eroded by 40 percent. I wonder if you would just comment about what this has meant? I think we are seeing across the services some important lessons, and we are just catching it every time we hear from the heads of commands or military personnel who have important areas of responsibility what this decline has meant.

Admiral DEMARS. Yes, sir. I think that there are two important aspects in submarine superiority that keeps us ahead of the Soviets. One is our technology, and we have spent most of this hearing discussing that. The other is people. We do have better people not only in the Navy but in the industry that supports it.

It is a very demanding business, and it requires that we pay them adequately to make them comfortable for the sacrifices that their families have to make. Submarine pay was last adjusted in 1980. It has lost about 40 percent of its earning power since then, and we have a request in to readjust that to gain most of that back. It is a very important initiative that applies both to officers and enlisted personnel. It does not amount to a large amount of money.

Senator KENNEDY. Do you remember what that figure is now?

Admiral DEMARS. It is about $28 million. And it applies to only 50,000 people, who comprise the submarine force. It is a very small number of people who run 38 percent of the Navy's combatants.

Senator KENNEDY. Very good.

Senator Exon.

SUBMARINE VULNERABILITY

Senator EXON. One quick question before we go into closed session. I am sure in closed session we are going to go into talking about some of the things that are based upon the question I am about to ask, but before we go into closed session I think it is particularly important that maybe we try and reassure Americans from time to time. They are spending an awful lot of money through our appropriations for national defense, and they do not get very much good news because I understand, Admiral, that you people who do a very excellent job of representing the various services come up here and tell us what you need. That is your job, and I think most of us are very sympathetic to what you are trying to do.

But I think also in public session we should maybe send some good signals. We continually hear about the situation that the Soviet Union is considered 9 or 11 feet tall, especially in the buildup along the line in NATO. But from my experience I would say, number one, and I want to know publicly if you agree, there is no window of vulnerability as far as our submarine force is concerned vis-a-vis the Soviet Union as of now.

Admiral DEMARS. Yes, sir.

Senator EXON. I recognize there is a threat. Is that right?

Admiral DEMARS. Yes, sir. We have a comfortable margin of superiority now. The concern is for the future.

Senator EXON. And to turn that around, would it be fair to say that the public can be better informed that we are doing something with the money that we are spending on national defense? Would it be fair to say that the Soviets, looking at it from their perspective, and since there is no window of vulnerability that you just testified to, in submarine warfare we are 9 to 11 feet tall as of now as far as the Soviets are concerned? Is that right?

Admiral DEMARS. Yes, sir. That is absolutely correct.

Senator EXON. Thank you, Mr. Chairman.

Senator KENNEDY. Senator Levin.

COMBAT SYSTEM

Senator LEVIN. Just one question about this May installation of the new combat system software, is it?

Admiral DEMARS. No, the entire combat system.

Senator LEVIN. The entire combat system. Is that something which is tested before May?

Admiral DEMARS. Yes, sir.

Senator LEVIN. Or something that we will see in May as to how well it is operating?

Admiral DEMARS. Sir, right now it is all hooked together at the IBM plant in Manassas, and signals are simulated and are playing through it, all the consoles, all the preamps, and so on are being tested right now for reliability and so forth.

Senator LEVIN. The reason I asked that is that this combat system for the new sub will be a follow-on in the new 688?

Admiral DEMARS. Yes, sir.

Senator LEVIN. We therefore will not know anything more in May or June basically about how that system operates than we know right now.

Admiral DEMARS. Except that many of the components that are in the BSY-1 system now that we are developing for the 688's will, of necessity, be used in the combat system for the fiscal year 1989 submarine because they are Navy standards, or they are the best thing to use from a cost-effective standpoint.

Senator LEVIN. My question is, We do not gain anything in terms of knowledge as to how well that new system will work by waiting until May or June?

Admiral **DeMars**. No, sir.

Senator **Levin**. Thank you.

Senator **Kennedy**. If there are no further questions, I want to thank you. That was an enormously interesting and helpful presentation. Any of the other Members who have questions, we will ask them to be submitted, and if there are any other comments that our witnesses want to make, or other testimony, we will ask that that be included, as well.

We want to thank you all very much. I am sure we will be back in touch with you as we have our own deliberations.

We will go to Adm. Kinnaird McKee, and we will go into closed session.

Thank you very much.

[Whereupon, at 11:30 a.m., the jointly meeting subcommittees proceeded into a closed session.]

EXECUTIVE SESSION

The subcommittees reconvened from open session at 11:31 a.m., in room SR-222, Russell Senate Office Building, Senator Edward M. Kennedy and Senator Carl Levin (chairman of the subcommittee on Projection Forces and Regional Defense and Subcommittee on Conventional Forces and Alliance Defense, respectively) presiding.

Present: Senators Kennedy, Levin, Stennis, Exon, Dixon, Shelby, Warner, Thurmond, Cohen, Quayle, Gramm, and McCain.

Staff present: Arnold L. Punaro, staff director; Carl M. Smith, staff director for the minority;.Romie L. Brownlee, deputy minority staff director; John J. Hamre, George K. Johnson, Jr., Ronald P. Kelly, James R. Locher III, Norman G. Mosher, Gordon G. Riggle, and Mark B. Robinson, professional staff members; Russell C. Miller, research assistant; and Lori M. Jackson, staff assistant.

Also present: Jeffrey B. Subko, assistant to Senator Exon; Greg Weaver, assistant to Senator Levin; Gregory B. Craig and William J. Lynn, assistants to Senator Kennedy; Charles C. Smith, assistant to Senator Dixon; Leon Fuerth, assistant to Senator Gore; Terrence Lynch, assistant to Senator Shelby; William J. Wight, assistant to Senator Warner; Dale F. Gerry, assistant to Senator Cohen; Henry D. Sokolski, assistant to Senator Quayle; Jay L. Kriss, assistant to Senator Wilson; Alan Ptak, assistant to Senator Gramm; and Samuel J. Routson, assistant to Senator Symms.

Senator **Kennedy**. Admiral, we are glad to have you here. Proceed in whatever manner you want. Under the general procedures we have close to an hour, but I know there will be some questions. So you may want to summarize your statement.

STATEMENT OF ADM. KINNAIRD R. McKEE, USN DIRECTOR, NAVAL NUCLEAR PROPULSION PROGRAM

Admiral **McKee**. Mr. Chairman, again you said the statement would be placed in the record?

Senator **Kennedy**. It will be placed in the record in its entirety.

Admiral **McKee**. Is the room properly cleared?

Senator **Kennedy**. I am told that it is properly cleared. I am instructed by the staff that we are properly cleared.

Admiral McKEE. If we are properly cleared, I will begin. I have brought some models along to try to show the specifics of what I am going to discuss today.

Senator KENNEDY. If it is agreeable with the members, we will permit them to ask questions as you go through. If it delays the Admiral's presentation, we will hold questions until the conclusion, but I think that we would like to try and keep this as informal as possible.

Admiral McKEE. Yes, sir. I would be pleased to do it that way.

Senator KENNEDY. And if we get held up in terms of the presentation, we will ask everyone to withhold, but I think this will probably work better.

Admiral McKEE. I am going to talk about where we are currently in building SSN-21 and I am going to give you some information that will illustrate what we are trying to do.

[Slides deleted.]

Admiral McKEE. First of all, the Navy has six missions that the whole fleet must perform. It is important to recognize that this submarine is being built to do four of those six missions into the 21st century.

An important point to get across in any discussion of submarine warfare is that the submarine has to be able to operate alone and unsupported in waters controlled by the enemy, conduct either offensive or defensive weapons operation for long periods of time, survive in the face of concentrated antisubmarine warfare, and do a lot of damage to the enemy.

If we cannot build these characteristics into a submarine, we ought not to build them.

The specific military characteristics needed in a submarine are these: stealth, mobility, firepower, toughness, longevity, and safety. I am going to talk mostly about the first three: stealth, mobility, and firepower.

Submarine warfare is guerrilla warfare at sea. Stealth, mobility, and firepower are the sine qua non for that purpose. Again, if we cannot build these characteristics into a submarine, we should not build them. An important point to make is that if we cannot build the necessary propulsion plant and acoustic characteristics into SSN-21, it will have none of these characteristics. If we cannot keep it quiet at low speed, it will not have stealth. If we cannot keep it quiet across the full range of its speed, then it will not have mobility. And if we cannot keep the power density high, it will not have sufficient room for weapons.

We also must build into it as we have always done in our submarines since the beginning of nuclear power, the ability to accommodate radiation. That has become a very sensitive issue, as everybody knows. There has been a lot of attention focused on it, brought about primarily by the events at Chernobyl.

SSN-21 is going to be built in sections, and today I will talk primarily about those sections that are the engine room. I will talk about how far along we are, what we have accomplished, and explain how we expect to be able to accomplish our goals.

I have brought along an example of what the Soviets are doing. This is the *Akula* class submarine—their latest and best. It is useful to get a size perspective because the Soviets have always been reputed to build only small submarines. The *Akula* is a big submarine. And to give you that perspective against our existing submarines, this is our newest, the 688-class—a much smaller submarine.

The issues I have outlined are quieting, power density, and producibility. We are seeking to do something in this submarine that has never been done before in any submarine. Nuclear power gave us endurance; the ability to stay down for a long period of time—six months, if necessary. [Deleted.]

We have talked about what the Soviets have done, and how well they have done, and where we are in comparison. Now I will give you some specifics.

[Deleted.]

The point I want to make today is that we are well along. We are in detailed design. You saw Admiral DeMars' schedule. In the propulsion plant, we are very far along, and I am going to show you how far because it is important for you to recognize that this is not just the business of working with pencil and paper.

For example, 2 years ago we began building an SSN-21 submarine in wood, as we do with all new designs. Senator Levin, you remember I told you about this. One of the reasons we can build and deliver this thing for what we said we could is that we are building it in wood beforehand. We make the mistakes in wood, and adjust the design as necessary rather than making the mistakes in steel and wire.

This is where we started. The wooden hull is the equivalent of what is in this model. Now what this model is intended to illustrate first is how far we have come, but it is also intended to illustrate the modular nature of the construction of this submarine.

We have built submarines on a modular basis before but we have never designed one to be built that way. We took the 688 and the Trident design and we modified them for this kind of construction; but the payoff is much greater if you have that in mind when you start.

As you know, for years we built submarines as if a watchmaker built a watch through the stemhole. We built a hull with a hole in it, then we throw everything in behind.

Now looking at this model—this is a small scale—here are some examples of what is happening at the Electric Boat Division today. This is the hull. This is the port side of the reactor compartment. [Deleted.]

If you look into the model, you are seeing at this point the engine room, [deleted]. In the fore part you see [deleted] the ship's service turbine generators, and [deleted] the electrical distribution system. Again, you are looking into this portion of the ship.

Modular construction can be illustrated in this model, because it is put together the same way. Instead of going into the hull and putting the individual bits and pieces in, we will build them together like this. This is part of the electrical system.

We will build the turbine generator sets in a complete package and install them. The main propulsion drive train will be delivered in one piece. This design is ongoing today, and ready for installation. It saves considerable time in construction, but to make this come out right we have to get the design of each component much farther along before construction starts than it was necessary in the 688 or the Trident.

In the 688 or the Trident, we went into construction with about 10 percent of the detailed design completed. In SSN-21, we will be going to construction with 80 to 85 percent of the detailed design completed. This is the [deleted] engine room. This will give you an example of the detail to which we have to work.

This is one of the nuclear piping manifolds. It has had to be reworked three times to get it right—three times; repositioned twice. Doing that in steel after the ship is well along would be a very expensive proposition.

We are working hard to design for the quiet performance that we need, and we know how to test individual components to make sure that they do not create more vibration and noise than we expect, but a critically important element of the process is: Does that noise get into the water? And how does it get into the water?

There are two factors. One is the fundamental design of the complex. [Deleted.]

Now all of these are well along in development. Again, these are not paper studies or laboratory experiments. Some of the work is being done in the laboratory, but the work we are doing is on real equipment, and the scale is 12 inches to the foot. You have to remember that the big reactor equipment takes 3 to 5 years to produce—3 to 5 years. If you interrupt that process for any reason, you create havoc.

The point I am trying to make is that anything you might do in terms of stretching out SSN-21 development would directly affect my ability to achieve the quieting performance and mobility goals we have set for the ship, and the impact of this makes concern for the combat system pale into insignificance, in my judgment.

For example, here is the reactor. That is the top of the reactor vessel. That is not an experiment. There is the upper portion of the reactor vessel. These are large forgings. It is a precision machine. That is the bottom of the reactor vessel [deleted]. Again, without delving into how it all works, the impression I want you to have is it is large, precision machinery which is expensive and hard to build in an industrial base where I am virtually the only business in town because of the problems with the commercial nuclear power industry.

The steam generators are those yellow things you see right there. This is the [deleted] pressurizer, which is the long brown component laying on its side; and the pumps. All are well along.

Once again, back to quieting. Remember, I told you that we are going to build individual components to very exacting standards. I also said we are doing [deleted].

We have talked a bit about schedule. It is useful to compare where we are in the schedule with the 688 and the Trident. As you can see, we have given ourselves 5 years to lead ship contract award as opposed to three in 688 and Trident, and the Trident is a far more complex submarine than this one—a far more complex submarine than this one. So we have consciously built into the program the room we need to do these very complex things. We have adequate time. Admiral DeMars and Admiral Reynolds have almost eight years to bring in the combat system. That is an extraordinary amount of time compared to anything we have ever done before.

What I want to close with is this notion: The submarine is an expensive beast, one of the most expensive individual investments we make. But it brings something to tactical and strategic thinking that no other platform does, and that is leverge. One submarine in a broad ocean area completely upsets the planning of fleet commanders and all sorts of folks.

If you remember the Falklands experience where the British had one submarine and it sunk one cruiser. This caused the Argentines to keep their entire Navy inside the 12-mile limit for the length of the conflict. In all probability, the British would not have been able to retake the Falklands had that not happened. One submarine. And the Argentines did not ever know whether it was still there or not, but it influenced their thinking for the remainder of the conflict.

The same thing in World War I, when one German lieutenant sank three cruisers in an afternoon. This influenced the outcome of the battle of Jutland two years later. Tremendous leverage.

So in looking at SSN-21 and what it will do, there are two points to make. One, you get a lot more for your money in terms of the application of military influence and force than you do with almost any other platform.

The other point is that we cannot do anything less than maintain the position we must with regard to what the other folks are doing. In the final analysis, what we are seeking to do is give the fleet commander a tool that gives him those things: the leverage I have described, extraordinary flexibility—again a function of mobility, and effective force level increases because he can keep more of these ships on station at a given time than he can with anything we have in the inventory today. And it is a far better combatant platform.

Just as important, what does it do for the Soviet? That is a good thing to look at. He is presented with this problem and you can see what it has done. They are expending far more resources than we are to try to catch up. Far more than we want to spend to stay ahead, they are going to spend to try to catch up, and they already are spending.

But if we can maintain the posture that Admiral DeMars described, we create tremendous problems for the other guy.

Finally, the bottom line is this: Stealth, mobility, and firepower. The whole structure of this submarine—the whole design, everything we are doing—is designed to enhance those three characteristics which are the principal elements of the leverage I have described. Mr. Chairman, that completes my prepared presentation.

[The prepared statement of Admiral McKee follows:]

PREPARED STATEMENT OF ADM. KINNAIRD E. MCKEE, U.S. NAVY, DIRECTOR, NAVAL NUCLEAR PROPULSION

Forty years ago, the Naval Nuclear Propulsion Program began work on the first prototype naval reactor plant. Today we have 179 reactors operating worldwide. Our principal development effort is the propulsion plant for the Navy's new attack submarine, SSN-21. Last year, Congress made a significant investment in the future by authorizing long lead material for *Seawolf*, first ship of the new class. The Navy is requesting you to authorize construction in fiscal year 1989. I will discuss this work in more detail, but first I would like to bring you up to date on the Naval Nuclear Propulsion Program.

The number of nuclear powered ships continues to grow. Last year 5 ships joined the fleet, bringing the total to 148, in addition to 8 land-based prototype plants. In the past year, nuclear powered ships conducted missions of major national importance and made several crucial deployments. Submarines demonstrated versatility and flexibility in unique under-ice operations culminating in a rendezvous of three ships at the North Pole. This overall exercise was the biggest Arctic operation in history. In short, nuclear powered ships have demonstrated remarkable operational capabilities on all fronts, while maintaining their unparalleled safety and environmental compliance records.

Safety remains a high priority. Two catastrophic events last year shattered any tendency toward complacency. Chernobyl emphasized the overriding need to ensure safe reactor plant operation. But to me, *Challenger* was more significant because it reinforced the continuing need for exceptional attention to all details of our technical work.

For perspective, consider that the Naval Nuclear Propulsion Program has almost twice as many operating reactors as all the civilian nuclear power generation plants in the United States. Nuclear powered ships have now steamed over 65 million miles—3,000 years of reactor operation—without a reactor accident or any radioactivity release having a significant environmental effect.

Although we are proud of this fine safety record, it also represents a potential vulnerability in that it could encourage complacency. We must never forget that safety, which is critically important in its own right, is also the basis for the public confidence that has allowed our nuclear powered ships to operate around the world, at sea and in port.

The Soviets also recognize the importance of Naval nuclear power. They have a major commitment to submarine development because they recognize that as the route to maritime supremacy.

Some public perceptions to the contrary, the Soviets use basically the same approach to submarine development as we do, but they apply a far greater industrial effort. They started a long way behind, but have been making impressive progress. The Soviets understand that one quiet, well-armed, balanced submarine is a match for many less capable ships. Their latest design, *Akula*, uses this balanced approach. *Akula* represents a Soviet answer to the Navy's highly capable and versatile 688 Class attack submarines. With upgrades we are now making, the 688 Class will still provide us an adequate margin of superiority over *Akula* and its predecessors, but we must look to the future. That is the purpose of SSN-21—to ensure our margin against future Soviet developments into the next century.

SSN-21 will significantly advance submarine warfare technology. Never have so many discrete technology developments been consolidated in a single submarine. SSN-21 will be quieter and more heavily armed than any attack submarine in history. Though no single feature could be considered revolutionary, the aggregate merits that description. For the first time a submarine will take full advantage not only of the endurance but also the mobility afforded by nuclear power, without sacrificing firepower or combat effectiveness.

Work continues apace on development of the SSN-21 plant. We will get substantially more power per pound from the plant than any submarine plant to date. Technological advances ranging from improved computers and analytical techniques to better fuels, materials, and electronics will help maximize performance of the plant. Enhanced quieting techniques will considerably reduce noise over SSN-21's entire speed range.

Detailed design of the plant is well along and fabrication of major test components is proceeding. For example, fabrication of principal reactor plant test components is more than half done. The one-fourth scale steel model of the propulsion plant is complete and tests are underway. Construction of the full scale mock-up of the plant is approaching the halfway point. This mock-up is a key feature of the design process. The mock-up allows confirmation of the overall plant arrangement and access to plant components and systems for operation and maintenance.

A new prototype plant would have been advantageous, but to minimize cost the reactor will be backfit in an existing prototype plant to test nuclear characteristics. Tests integrating the overall reactor plant will be carried out in a separate test facility. Testing of selected components began in 1986 to confirm design features. Integrated testing of the plant will commence in 1989.

Orders are being placed for long lead components of the *Seawolf*'s plant. Progress to date supports the planned award of *Seawolf* construction in fiscal year 1989.

SSN-21 will be a remarkable ship, but critical to the successful application of this technology, as always, are people. Our nuclear-trained officers and men are the best and have justifiable pride in the job they are doing. They work hard, spend long periods away from home and family, and meet unparalleled standards of professional competence. We must keep in mind that these people are our most valuable resource, and continue to treat them accordingly.

In deliberating defense requirements, Congress must weigh the merits of competing options. In such an environment, the best investments are those which offer the greatest strategic and tactical leverage. Nuclear powered ships have to be at the top of that list and SSN-21 will be a significant addition. These ships make up nearly half the Navy's combatants and comprise the entire sea-going strategic deterrent force, yet require relatively small resources. Their superlative crews further enrich the return from our investment.

Your past support is responsible for the success enjoyed by these ships and these men; your continued support will ensure we retain the edge we now enjoy.

Senator **Kennedy**. Thank you, Admiral.

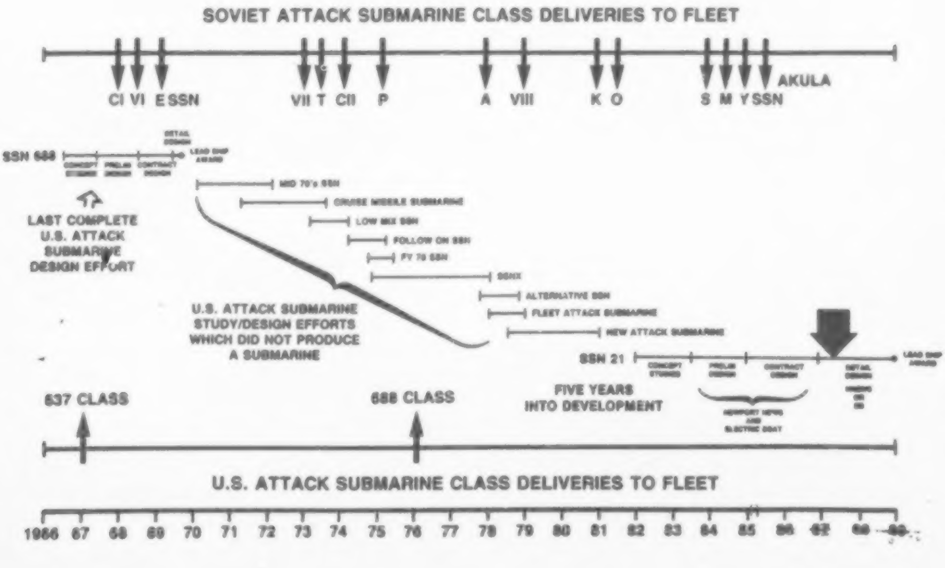
I would like you to focus, if you would, on some of the questions that we raised earlier with Admiral DeMars on what are the concerns about the concurrency of various combat systems.

The issue as Senator Levin has pointed out, is not whether this system is needed for national security, because clearly it is; but the question is what are the risks that are going to be assumed if we defer this system for a year, and whether some of those concerns can be worked out.

What do you see as the security risks we are facing? What are we risking, from a strategic point of view or a tactical point of view, by deferrals for a year?

Admiral **DeMars**. Yes, sir. I think that one is the threat which, clearly, continues to move on. There are two quick ways to look at that. If one looks at attack submarine developments, this is the point in time when we finished the 688 class.

ATTACK SUBMARINE DEVELOPMENTS



We delivered the 637 class, the *Sturgeon* class, to sea in 1966. We started the design of the 688 class. We made the lead ship award there. We delivered the 688 class there. When we made the lead ship award, we then started studying. These are all studies that were made trying to get another new submarine started.

We finally justified it; in 1982 we started our development of SSN-21, and now we are at this point in time [indicating]. We went really from that point, to that point, and we studied the devil out of this thing.

While we were doing that, the Soviets were producing these individual classes of attack submarines. These are not one-of-a-kind experimental submarines but are classes of attack submarines. While we are studying, they are building.

It is clear that we lost momentum in this period [indicating]. We should have continued another submarine design after we awarded that lead ship so we would have another submarine class coming in. We are probably 5 or 6 years late in coming in with this submarine.

Now that is the sort of the threat end of it. What is the business end of it? Well, there may be some reasons to delay. Why delay? Is the submarine not good enough? We think it meets the threat with margins that will hold up well into the next century.

Do you want to give the R&D time to mature? Then you cannot reduce the funding, because obviously you feel there is too much risk. You have got to keep working on it. You have got to keep the funding going, not only for the combat system, but for Admiral McKee, because he cannot lay off all those people that are building those big components.

Do you want to save money? That implies it will be easier to fund it in the future than it is right now. What is that impact? We have got these things going on. Research and development is about $213 million in this year's budget, 2,000 engineers, 500 different contracts; in ship design, 800 engineers at Newport News on the one hand and Electric Boat on the other, four major contracts; in the advanced procurement, 115 contracts.

SSN-21 DELAY

WHY DELAY?

- NOT GOOD ENOUGH → MEETS THREAT WITH MARGIN
- R&D TIME TO MATURE → DON'T REDUCE FUNDING
- SAVE MONEY → IMPLIES FUNDING EASIER IN FUTURE!

R&D ($213M)

2000 ENGINEERS
160 R&D PROJECTS / SUBPROJECTS
500 CONTRACTS

SHIP DESIGN ($91M)

800 ENGINEERS
2 MAJOR SHIPBUILDERS
58 SUBCONTRACTORS
4 CONTRACTS

ADVANCE PROCUREMENT ($166M)

400 PERSONNEL
50 VENDORS / SUBCONTRACTORS
115 CONTRACTS

⇨ **DELAY**

CREATES RISK
KILLS MOMENTUM
WASTES MONEY

If you say stop, stretch this out a year, it is going to be chaos. I think it creates risk. It creates business risk, aside from the threat risk, as the Soviets continue to go on. It creates risk, it kills momentum; it is a tremendous waste of money, and in fact it will not be a 1-year delay. For completely different reasons, we have seen what happened in the Challenger program. We expected to shut it down, study some things, and start it up again. They are having a devil of a time getting started up. It is a very complex process we have put together here.

So the threat mandates that we move on and deliver this submarine, in which we are probably already five or six years too late; but more importantly, if we say now the risk looks too large and let us wait a year, we are incurring greater risk mainly from a business standpoint. We will never regain the momentum, and it will be a significant waste of money, in my opinion.

Admiral McKEE. May I add something to that on a somewhat broader perspective, Mr. Chairman? We are talking about a 12-year development, and it is being offered that we cannot get it done in 12, so maybe we ought to do it in 13.

The point that I would make is that 12 years is too long. All of you, if I may presume to advise, should be mad at me in particular, and Admiral DeMars too, because it has taken us 12 years.

Nautilus went from a gleam in Admiral Rickover's eye to her first sea trials in about 7 years. The *Polaris* system went from a gleam in the President's eye to the first launch in 5 years—starting with no missile, no software integration, no hardware, and no submarine. Now we are taking 12 years. The notion of adding another year into it, that somehow this will make it better, I have trouble understanding.

The point is, we have got the momentum and so far we have seen nothing unfavorable in what we have done. Problem? Yes, but by virtue of the way we have structured this thing, we are solving the problems as they occur in the design process, rather than afterward.

Senator KENNEDY. May I ask you, given the fact that the combat system is crucial to the performance of your submarine, have you made any provisions for a fallback? In other words, do you have an alternative combat system should the development of the present one not go as planned?

Admiral MCKEE. We can both answer that.

The critical elements of the combat system, which are the cabinets and, most important, the sensors that are out on the hull, we would not change no matter what came out. The hardware structure of the combat system will not change. If you encounter difficulties in the integration process—and again those have been minimized, or have been attempted to be minimized by doing it with a distributed system package instead of one massive integration—then you simply rearrange the priorities in that development, and you get the full capability in the ship, perhaps a few months or a year later.

This is exactly what we have done in submarines for years. When we put the first of the modern combat systems in the USS *Tullibee* years ago, the fundamental development and tactical employment of that was all done in the fleet after the fact because the critical elements were already at sea in the submarine. That is exactly the same posture we would find ourselves in if we slowed down here.

Admiral DEMARS. The only thing I would add to that, Senator, is that, based on design, certain things stay with that submarine its entire life—the depth it can go to, the speed it can go to, basically how quiet it is, how fast it is. Other things are changed out regularly.

It is our experience in the 30-year life of a submarine that we will probably change out the combat system three to four times as technology improves. So the arrays that are at sea right now and the cabinets and the software that we are designing and developing will probably be modified again about ten years or so after submarine delivery to keep apace with technology.

Senator KENNEDY. The Senator from South Carolina.

Senator THURMOND. Thank you, Mr. Chairman.

Admiral DeMars, how many conventional Tomahawk missiles would it have taken to achieve the same level of damage in the April 1986 attack on Libya, and how many 688 class submarines would have been required?

Admiral DEMARS. I will have to take that question for the record, Senator, for the exact numbers. Basically a Tomahawk missile is a [deleted] pound warhead, but in order to get the exact details of how many bombs were used and how many missiles, I will take that for the record, Senator, please.

Senator THURMOND. Certainly.

[The information follows:]

TOMAHAWK COMPARISON

Admiral **DeMars**. A conventional land attack Tomahawk missile (TLAM-C) has a [deleted].

Senator **Thurmond**. That is all I have, Mr. Chairman.

Senator **Kennedy**. Senator Stennis.

Senator **Stennis**. Mr. Chairman, before you leave, I want to thank you especially for a very fine presentation from both witnesses today. It is about the best I have ever seen, and has been very informative.

Senator **Kennedy**. Well, thank you very much, Senator Stennis. They have all been very excellent presentations.

Senator **Levin**. He has literally heard them all. [Laughter.]

Senator **Stennis**. I will pass, otherwise.

Senator **Levin** [presiding]. If you pass, we will go to Senator Exon.

Senator **Exon**. Thank you very much, Mr. Chairman. I have no questions. I had to step out for a few minutes, but I think you know I follow the submarine program very well, and I congratulate both of you for an excellent presentation today and for keeping us posted. As far as I am concerned, you have answered the question very, very well, and are right up front with it.

I think you do an outstanding job in the submarine service and all I can say, gentleman, is keep up the good work and keep us posted. Thank you.

And thank you, Mr. Chairman.

Senator **Levin**. Senator McCain.

Senator **McCain**. Thank you, Mr. Chairman.

Also, Admirals, I would like to congratulate you both on an excellent presentation.

Admiral McKee, you mentioned the numerous classes of Soviet submarines that had been developed in the intervening period since we developed the 688. How many, in numbers, submarines have they put to sea?

Admiral **McKee**. I do not know—we could give you that for the record, but in general terms they have about [deleted] attack submarines at sea, and we have 100 nuclear attack submarines today.

Senator **McCain**. I see. So although they were different classes, I think it is fair to say that there were not significant numbers in those classes?

Admiral **McKee**. They built a significant number of *Victor III's* and a couple of other classes, but the point I think you are making is that they were searching for the answer by going in all different directions, and they never could quite settle on the one that was the answer. They have never done a production run of any class of submarine as long as we have done in the 637 or 688 class.

Senator **McCain**. Could we look again at a slide—I do not know how hard it will be for you to find it—as far as the quietness of the improved 688 versus the SSN-21. I would just like to look at that again, because it seems to me, and I would like for you to elaborate on this, it appears to me that [deleted].

Admiral **McKee**. [Deleted.]

Senator McCain. Yes, but we are comparing the new design of the SSN-21 with—excuse me. We are comparing the new-design 688 with the, the improved 688 with the new-design SSN-21?

Admiral McKee. [Deleted.]

Senator McCain. What is the normal maneuvering speed of an attack submarine?

Admiral McKee. It is as fast as you can go and still hear but not be heard; because the faster you go, the better the search rate. The search rate is a direct geometric function of how fast the submarine moves through the water sweeping. So it is to your advantage to move as fast as you can all the time. Also, if the submarine is up and moving rapidly and somebody else shoots at it, it already has a head of steam up when the guy puts the torpedo in the water, and it can run the torpedo out of gas, unless the enemy gets very, very close to shoot.

[Deleted.] That is what I am trying to get across, Senator, when we were talking about mobility.

Senator McCain. I notice we have got models here that compare the Soviet's latest and the SSN-21 and the 688. How does this SSN-21 compare beside the Trident?

Admiral McKee. The Trident is 18,000 tons. This boat is [deleted].

Senator McCain. Would you elaborate just a little bit more, finally, why this submarine has to be [deleted].

Admiral McKee. [Deleted.]

Senator McCain. And you have two different groups competing for the contract? Is that true?

Admiral McKee. Yes, sir. It will be Newport News and Electric Boat Division, it will not be a single contract. We will always have two ship builders who want to build it, and they will compete for each ship. We expect it to be built by both ship builders.

Senator McCain. Thank you very much, Mr. Chairman.

Senator Levin. Senator Exon did have a question.

Senator Exon. Just one comment, actually.

I just wanted to tell the committee that everything in these submarines is not quite as good as the Admirals are leading us to believe. I had an experience—the Admiral is laughing already.

I had a personal experience about 10 days ago. I went out on a 688, and I was driving the boat, and we went from 200 feet to [deleted]. I was following directions explicitly sitting in that chair, and when we pulled out they told me I would have to exercise some strength, and I did, and I broke the chair. [Laughter.]

It is possible that that chair was not built for someone quite as big as I am, but I suspect that I set the program back a great deal, because I am sure she is going to have to come into port to have the chair fixed. But seriously speaking, that was a great experience and I hope that some of my colleagues have a chance to get out and be on a submarine, and talk to the crew, and see the great job that they do.

Above anything else, I learned about the spirit of the submariner, and I talked to them about everything, including drug testing, and their general morale, and it was excellent. You do one great job, and I hope you get the chair fixed. Send me the bill.

Admiral McKEE. Thank you very much, Senator Exon. Well, that was rigged out to prove to you that we are really a low-budget outfit. [Laughter.]

Senator EXON. I think they were trying to tell me something, that they just needed a little more money.

Senator MCCAIN. Senator, I would like to commend that crew for a diving cross. [Laughter.]

Senator EXON. Well, I looked at Admiral McKee and there was a look of horror on his face. I think he was ready to bail out. He had confidence in the ship, despite the fact that the chair failed.

Senator LEVIN. The difference between Senator Exon and Senator Dixon is that Exon breaks a chair. If Dixon were on that sub, the whole damn sub would have broken. [Laughter.]

Senator Shelby.

Senator SHELBY. Thank you, Mr. Chairman.

Both of your presentations have been excellent. You have answered all my questions. I like what Admiral McKee just said that maybe the Soviet Union is searching for the answer. I hope you have found the answer here in your proposed sub.

I am interested in the cost, just like everyone here is. It seems to me the more you build, and the sooner you build them, the cost analysis comes out a lot better.

Admiral McKEE. Yes, sir.

There is a learning curve in anything you build. The Trident is a very expensive submarine. You have to measure it in terms of what is does to see whether it is cost effective or not. You have to get on with it and see what is really going to happen.

We have left the man hours off because that tends to be proprietary information, but in general terms this is the cost in man hours of the first submarine. We put the cost in man hours because that is independent of inflation or anything else.

You can see that the Trident trend has been downward. It is reset at this point because we shifted to the new D-5 weapons system at that point, so there is an uncertainty, and the curve starts again.

But this is exactly what we must do with the new boat, and what we expect to do.

Senator SHELBY. Thank you.

Senator LEVIN. Admiral, the GAO has told us today the following—to read from your testimony: "That the Navy recognizes that there is risk associated with their approach, but contends there is no alternative because the combat system development in its delivery schedule are being driven by the ship construction schedule."

"As a result," now they are saying, "there is a high risk that the first *Seawolf's* may not achieve full tactical performance capability when first delivered to the Navy. In fact, on April 2, 1986, a Navy memorandum stated that some operability improvement may be delivered without sea validation, and some will be delayed requiring further development and modificiation."

Finally, they write, "The advantage to concurrently developing and producing a combat system is, a system can be developed and delivered early. The disadvantage is that if technical problems have not been resolved, then all subsequent systems will have similar problems until they are fit."

Now I have left out a word or two, which I think did not affect the thrust of what they were saying. Do you disagree basically with that? That the risk is essentially either way, but you feel there is greater risk in a year's delay, and a greater cost in a year's delay, but that you would concede, and the Navy apparently has conceded, that there is a risk in this approach. Is that a fair statement of where you are?

Admiral DeMars. There is risk of course in an undertaking of this magnitude. There is always risk, and we have to recognize that. I think that there is more risk in delaying what we are doing in the quieting and in the components that Admiral McKee has explained than there is in the combat system.

We recognize the potential risk in the combat system and have attempted to write that into the development of the system, so that we have taken steps to mitigate the risk largely in the software development by trying to compartmentize the software so we work on the most important parts first, and deliver those to the system, play that together first, and then if we run into problems then we will forego some at the trailing edge of the software development where we might be at the 80 or the 85 percentile level capability for the submarine, and that can be delivered later on.

Senator Levin. Now the risk to you, Admiral McKee, of a year's delay, let's say was stated by you as risk on I think you said quieting, and a risk on something else. Could you be more specific? Assuming we keep money there to keep your technical crew together at the ship yard so that is not dispersed, what are the risks in terms of quieting in terms of a year's delay to make sure the combat system is where we want it?

Admiral McKee. If you were to simply delay the ship for a year, but provide all the money that we have asked for is that what you are saying you would do?

Senator Levin. Assuming that—as I understand it, there is a long lead in 1988, with procurement in 1989.

Admiral DeMars. But there is research and development money phased each year.

Senator Levin. I do not have the exact numbers. You are going to have to help me out.

Admiral DeMars. About $213 million in research and development funds phased this year.

Senator Levin. If you just delayed everything one year, but kept enough in there so you do not lose your people who are working on these various systems. That may cost us some money, I presume there is some cost to keep together that kind of an operation, but it may also help in terms of the integration of the combat system to make sure it comes in at the same time the rest of the program is put together, the way we like it.

I am not urging that course of action. I am just asking you, what would the effect of that course of action be on the quieting issue and any other issue that you are working on?

Admiral McKee. It would simply disrupt a very carefully structured program of checks and balances, and the momentum. And it would disrupt——

Senator Levin. Could you be more specific?

Admiral McKee [continuing]. Disrupt the team.

The only way to avoid disruption and to protect your investment is to leave the funding profile the way it is so I can continue this process.

Remember, we have already bought long-lead material. I am under contract for that right now. That was in 1987. There is some long-lead money in 1988, but the bulk of it was in 1987. What the Congress cut out in 1987 is in fiscal year 1988.

If we do not continue along that line, then we are going to [deleted].

We take what is done there, and then we go back into this process and put it in. So it is a very carefully sequenced process of checks and balances and experiments.

If you just come in and say, "Lets take a year off and cut the money down to here," the whole program would just sort of fall down. If it stretches, frankly, Senator, I cannot tell you what will happen. We will lose a lot of good people. People will get up and go because we will not be able to pay them. Then when it is time to get them back, we will not be able to do that again because there are not very many competent naval architects in the submarine design business in our country.

Senator LEVIN. Is there a way, not to delay this but of slowing it down to allow the combat system to catch up and have its completion come 6 months to a year later? Assuming that the GAO is right, and I presume that there is a problem if they are right, although I am not sure you agree with that——

Admiral DEMARS. I do not agree that they are right, at all.

Admiral MCKEE. The point is we are taking 12 years, of which 8 years is devoted to this combat system. That is more time than has been devoted to any submarine combat system in history, and we are going to add another year?

Senator LEVIN. I think it is kind of like your argument in the alternative, if you will. You say, number one, they are wrong that there is a problem. Number two, even if they are right that there is a problem, you still should proceed at the same pace.

Admiral DEMARS. Right. We have built in risk mitigation, and it is not time yet to say that we should delay it.

Admiral MCKEE. That is right.

Senator LEVIN. Let me ask just a couple of quick questions, because I think the issue is probably fairly clear.

If you could provide us for the record, what would it cost minimally if we did delay. Because obviously there is a cost involved to mitigate against a loss of momentum, to make sure you do not lose this.

Admiral DEMARS. Yes, sir, we will. And as I tried to point out before, it is not cut and dried, because I do not believe you could, say, delay 1 year and it would be 1 year.

Senator LEVIN. I understand, but try to work on the assumption that you do not buy. I mean, even assuming something you do not believe in, there are real costs in delay. It is not just momentum costs. As you point out in one of your three costs there, there are some real dollar costs, and we would like you to supply that for the record.

Admiral DEMARS. Yes, sir. If I might add just one other thing, I find it "amusing" which is the wrong word, but we are talking about risk in the combat system, and the concern that we should delay the entire program because of combat system risk.

Last year, the Congress took out about a third of the money that I require to develop this combat system. I am not sure why it was done. It was done in the final end game. We lost $31 million. I have had that put back in the 1988 authorization.

So on the one hand, while I am bringing forth the hopefully forceful arguments about why there is not risk in the combat system when we should not delay it; on the other hand I had money removed which increases the risk, and I have it now back in 1988. I had to get in my commercial for my money.

[The information follows:]

DELAYING SSN-21

Admiral **DeMars**. To delay the SSN-21 at this stage of its development, which is 5 years into a 12-year program, would create utter and complete chaos. This would disrupt the R&D teams of over 2000 engineers, ship design process with over 800 engineers, and 50 vendors/subcontractors affecting more than 400 personnel. In all likelihood, it would stop the program rather than just delay it. Assuming one could delay the ship just one year by maintaining required funding total costs for RDT&E and lead ship would increase in the range of $300 million to $400 million. These costs are due to keeping research and development and design teams in place for another year and inflation. Additionally, assuming a 1-year shift in the procurement of all follow ships, the cost of these ships would increase by about $1 billion due to inflation.

Senator **Levin**. It is a self-fulfilling prophesy.

Admiral **DeMars**. Yes, sir. Exactly.

Senator **Levin**. We told you so. [Laughter.]

I do not remember the details on that, either.

Admiral **DeMars**. No, sir, but I have got the request back in 1988.

Senator **Levin**. Whatever we did, I am sure it was right—at least there is a one-in-six chance it is right.

Admiral **DeMars**. Yes, sir. It was not you.

Senator **Levin**. Just a couple of quick questions.

Senator Exon asked you about, and someone else asked you about the submarine force in general. I think we all appreciate your answer in terms of our capability versus the Soviet Union.

I gather that even though they have [deleted] attack submarines and we have 100—were those the figures?

Admiral **DeMars**. Yes, sir.

Admiral **McKee**. Yes, sir.

Senator **Levin** [continuing]. That our fleet has greater capability than theirs. Our 100 has a greater capability than their [deleted].

Admiral **DeMars**. Yes, sir.

Admiral **McKee**. No question.

Admiral **DeMars**. [Deleted.]

Senator **Levin**. [Deleted.]

Admiral **DeMars**. [Deleted.]

Admiral **McKee**. [Deleted.]

Senator **Exon**. [Deleted.]

Senator **Levin**. You brought enough other exhibits.

Admiral **DeMars**. Yes, sir.

Senator **Levin**. It is easier to take them apart than it is to put them back together. I want to watch you put them back together.

Admiral McKee. I brought a guy to do that for me. [Laughter.]

Senator Exon. Where is the seat? [Laughter.]

Senator Levin. That must have to do with Murphy's Law of Resonance. I am delighted that Murphy finally stated a law which is useful. There are so many Murphy's Laws around here—there really is a Murphy's Law?

Admiral McKee. No, this is another joke. Murphy's Law of Resonance says what can be in resonance will be in resonance.

Senator Levin. Oh, I have got it. So this is another one of Murphy's bad laws?

Admiral McKee. Yes, sir.

Senator Levin. OK. Senator Exon, do you have anything further?

Senator Exon. The only thing, this is a dumb question, but I know you will give me an intelligent answer. I was looking at that new [deleted.]

Admiral McKee. Yes, sir.

Senator Exon. So it is more than [deleted.]

Admiral McKee. Yes, sir.

Senator Exon. [Deleted.]

Admiral McKee. [Deleted.]

Admiral DeMars. [Deleted.]

Senator Exon. Thank you.

Thank you, Mr. Chairman, I have no further questions.

Senator Levin. I just have one additional one. I think, Admiral DeMars, you were asked to comment on this and you indicated your answer would be for the record.

Let me ask Admiral McKee if he might have a comment. The GAO reports the following: Discussions with Naval Underwater Systems Center officials, you were informed that a cost above $300 per line to develop fully documented and tested a new line of software which could mean the cost of this new software alone could be about $750 million. The GAO "says the Navy's R&D estimate includes only about $255 million for software development of the combat system." I may be wrong that I asked you this question. I asked somebody.

Admiral DeMars. Yes, you did. I might have given somewhat of a partial answer. Not all of these lines of software code we are using have to be developed. Some are not new. Some are on the shelf now and are other programs that are just incorporated into the system. Others have to be modified and not completely developed. I will get a more complete answer for the record.

Senator Levin. I did not know whether Admiral McKee might have anything on that area or not.

Admiral McKee. No, sir, that is not my circuit, but my perception is that the GAO simply took the number of lines of code in the finished system and multiplied it by $300, and that is an assumption that is completely invalid.

Senator Levin. I think it would be useful for you to get together and give us the information as to what is needed, and also to get together with the GAO on it. That should not be so much in contest.

Admiral DeMars. No, sir. I agree.

Senator Levin. If they have made a false assumption, in advance of this kind of a hearing, I would think that you and the GAO ought to get together on what the assumption is so that the GAO could at least tell us that the Navy says that they do not need each of those lines, some of them are already developed, or whatever the answer is. I would think the distance between the Navy and the GAO should not be quite so far.

Admiral **DEMARS**. No, sir. We have—if I might, just for a minute—we have been once again "plagued" is the wrong word, but our interface with GAO has not been a good one from the standpoint of results, because we did have severe combat system problems about 3-plus years ago. The GAO was properly and deeply involved in it.

Their reports are generally sometime late. So we are continuing to respond to things which we have changed. We think we have settled out now, and so we should make an effort to get back with the GAO now and get ourselves both properly benchmarked from both standpoints so that when we do come forward, we are at least talking from the same data, I agree.

Senator **LEVIN**. You may want to put some money in there for some systems integration between the Navy and the GAO.

Admiral **DEMARS**. No software, please. [Laughter.]

Senator **LEVIN**. We want to thank you. Your presentation has been tremendous. Your enthusiasm was very evident and appropriate, and we thank you for your presentation.

Admiral **DEMARS**. Thank you, sir.

Admiral **MCKEE**. Thank you, sir.

[Questions for the hearing record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR DAN QUAYLE

SSN-21 CAPABILITIES

Senator **QUAYLE**. How much greater will the land and ship attack capabilities of the SSN-21 be in comparison to the SNN-688?

Admiral **DEMARS**. [Deleted.]

CRUISE MISSILE TARGETING

Senator **QUAYLE**. What effort is being made to improve our ability to communicate cruise missile (TLAM-C) targeting information to the SSN-21 over our current limited capabilities?

Admiral **DEMARS**. Our current capability to pass targeting information is not limited. A full mission can be passed to the SSN limited only by the priority of the message relative to other traffic. Additionally Mission Data Updates can be passed to update on board missions. The received message is passed automatically from the radio receiver to the Fire Control System.

NAVY FORCE MIX

Senator **QUAYLE**. Given this improvement is there any reason to reconsider what the appropriate mix of surface and submarine combatants should be in the late 1990s?

Admiral **DEMARS**. With the exception of the added mission flexibility of the SSN-21 due to its greater weapon load, the basic role of the submarine with respect to the surface fleet is not changed. Therefore I see no need to reconsider the mix of surface and submarine combatants for the late 1990's.

[Whereupon, at 12:39 p.m., the subcommittees were adjourned, subject to the call of the Chairs.]

DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEARS 1988 AND 1989

THURSDAY, MARCH 26, 1987

U.S. SENATE, SUBCOMMITTEE ON CONVENTIONAL FORCES AND ALLIANCE DEFENSE, SUBCOMMITTEE ON PROJECTION FORCES AND REGIONAL DEFENSE, COMMITTEE ON ARMED SERVICES,
Washington, DC.

NAVY AVIATION PROGRAMS

The subcommittees met in open session, pursuant to notice, at 2 p.m., in room SR-222, Russell Senate Office Building, Senator Carl Levin (chairman) Subcommittee on Conventional Forces and Alliance Defense, presiding.

Present: Senators Levin, Nunn, Kennedy, Dixon, Warner, Thurmond, Humphrey, Cohen, Symms, and McCain.

Staff present: Carl M. Smith, staff director for the minority; Kathryn E. Bognovitz, special assistant; Richard D. Finn, John J. Hamre, Ronald P. Kelly, James R. Locher III, David S. Lyles, Norman G. Mosher, Gordon G. Riggle, Mark B. Robinson, Daniel J. Wildfong, professional staff members; Russell C. Miller, research assistant; Lori M. Jackson and Paula J. Kovacs, staff assistants.

Also present: Greg Weaver, assistant to Senator Levin; Jeffrey B. Subko, assistant to Senator Exon; Gregory B. Craig and William J. Lynn, assistants to Senator Kennedy; Charles C. Smith, assistant to Senator Dixon; Milton D. Beach, assistant to Senator Glenn; Leon Fuerth, assistant to Senator Gore; James R. Sayer, assistant to Senator Wirth; Terrence Lynch, assistant to Senator Shelby; William J. Wight, assistant to Senator Warner, Dale F. Gerry, assistant to Senator Cohen; Mark J. Albrecht, assistant to Senator Wilson; Alan Ptak, assistant to Senator Gramm; Samuel J. Routson, assistant to Senator Symms; and Patrick A. Putignano, assistant to Senator McCain.

OPENING STATEMENT OF SENATOR CARL LEVIN, CHAIRMAN

Senator LEVIN. This afternoon the Conventional Forces and Alliance Defense Subcommittee and the Projection Forces and Regional Defense Subcommittee will jointly receive testimony on Navy aviation programs in fiscal years 1988-1989 budgets. Both subcommittees have jurisdiction over programs in the Navy aviation account.

The budget as proposed by the administration raises serious questions about priorities and balance in Navy planning. The Navy is proposing to accelerate by 4 years the procurement of aircraft carriers and at the same time is stretching out the procurement of combat aircraft that operate from those carriers.

Compared to last year's plans the Navy has slashed a third of the combat aircraft out of its budget. Those stretchouts will increase procurement costs and will force Navy pilots to operate older, obsolete equipment for longer periods.

While aging aircraft carriers are unacceptable, aging combat aircraft apparently are acceptable to the Navy. But this is a question that deserves careful review.

Ultimately the projection power of the Navy depends upon the capabilities of its combat aircraft. The aircraft carriers are an important ingredient. They serve a supporting role to the combat aircraft.

This hearing will explore the status of Navy aviation and bring to light the problems with individual programs in the Navy aviation account.

We are going to begin this afternoon by hearing from Mr. Robert Hale, who is the Assistant Director for National Security and International Affairs at the Congressional Budget Office.

Mr. Hale will present the results of a study of Navy aviation requested by Senator Nunn on behalf of the Armed Services Committee.

Then following Mr. Hale's testimony we will hear from Vice Adm. Robert Dunn, who is the Deputy Chief of Naval Operations for Air Warfare.

Before we turn to our witnesses let me first ask Senator Kennedy if he has an opening statement.

Senator KENNEDY. Just a very brief one, Mr. Chairman. Combat aircraft for the Navy are currently below the stated requirements, and the shortfall is projected to grow worse.

The issue is priorities. What sense does it make for the administration to propose $7 billion for two more aircraft carriers without asking for enough aircraft to equip them? What is the point of building an aircraft carrier without aircraft for the carrier?

The dilemma is only the tip of the iceberg with regard to troubles in naval aviation. Too many procurement lines. Too few planes procured per line. Unit costs are out of control because we are buying so inefficiently.

The result is an aging force with lesser capabilities, higher operating costs. At the same time, modifications cannot be made to get grounded aircraft flying, because the aircraft modifications account was looted to accommodate the two carriers in the budget.

Modernization of the aircraft carriers is out of pace with the modernization of the planes that would fly from them. Aircraft carriers are not warships but airfields. The aircraft do the fighting. The further they do it from the carrier the better.

The Navy needs adequate air wings and we are seeing here a shortsighted policy that is doing long term damage to our national security.

Mr. Chairman, as I understand it the Navy aviation plans specify that the Navy needs to procure 329 aircraft per year to modernize the fleet, and maintain the current average age for the fleet. Now they are averaging only 260 per year for the next 5 years, which is something that we are going to have to take a look at.

Thank you, Mr. Chairman.

Senator **Levin**. Thank you, Senator Kennedy. Senator Cohen, do you have an opening statement?

Senator **Cohen**. No, thank you, Mr. Chairman.

Senator **Levin**. I have a statement from Senator Dixon to be submitted for the record.

Prepared Statement by Senator Alan J. Dixon

Mr. Chairman, this afternoon the Joint Subcommittees on Projection Forces and Conventional Forces meet to receive testimony on the U.S. Navy's aviation programs.

I am greatly concerned by the administration's budget proposal that stretches out many of our best aircraft programs, such as the F-18 fighter and the Marine Corps AV8-B. We need to avoid the feast and famine approach in funding those proven efficient production lines. We must restructure the priorities of the defense budget and seek to eliminate marginal defense programs. We don't need quick fixes—such as stretchouts—we must match our military forces with an achievable defense budget.

Thank you, Mr. Chairman.

Senator **Levin**. Senator McCain or Senator Symms. Welcome.

Thank you. You may proceed as you wish either by hopefully summarizing your statement, but in any event we will put the entire statement in the record.

STATEMENT OF ROBERT F. HALE, ASSISTANT DIRECTOR, NATIONAL SECURITY DIVISION, CONGRESSIONAL BUDGET OFFICE, ACCOMPANIED BY MS. LANE PIERROT

Mr. **Hale**. Thank you, Mr. Chairman. I have with me today Ms. Lane Pierrot, who did the analysis that I am going to present. We both appreciate the opportunity to testify today on issues related to Navy aircraft.

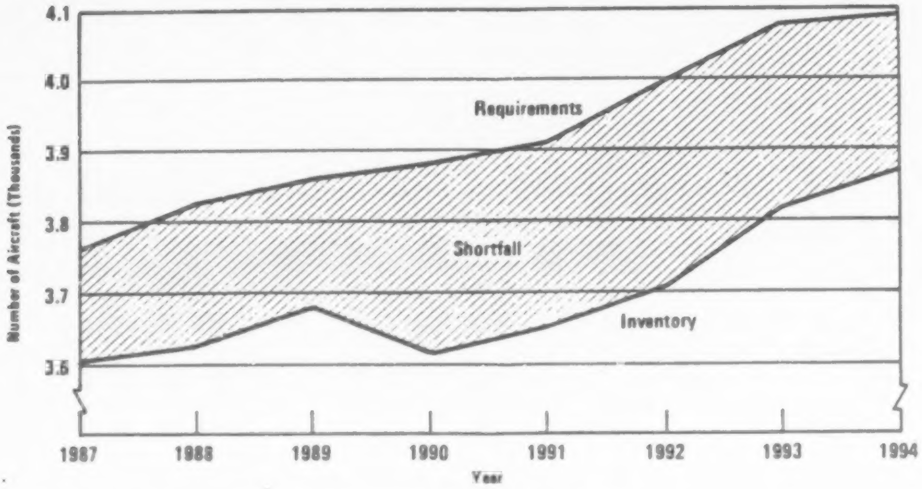
Based on assumptions supplied to us by the Navy and on the 5-year plan for aircraft procurement that accompanies the 1988 budget, the Navy's inventory of combat aircraft will fall short of requirements by about 222 planes in 1994, the earliest year when all the planes we will buy over the next 5 years will be in the fleet. The Navy may be able to accommodate these shortfalls, though doing so could adversely affect the fleet in peacetime and even more so in war. If the Navy decides not to accommodate the shortfalls, it would need additional funds for aircraft that could amount to about $8 billion in today's dollars.

Moreover, as I will note, the shortfalls and the costs to meet them could be significantly larger, depending on assumptions about when aircraft are retired. Let me turn to a few of the details that underlie these findings.

AIRCRAFT SHORTFALLS AND COSTS TO MEET THEM

My testimony this afternoon deals with Navy combat aircraft and helicopters, the ones procured in so-called budget activity or the "combat" aircraft portion of the Navy's aircraft procurement account. The requirements and inventory for these aircraft are shown in the following figure. Requirements totaled 3,820 in 1987 and increased to 4,085 by 1994. These are based on Navy plans. Let me add, Mr. Chairman, that CBO received excellent cooperation from the Navy, which was most helpful in working out a lot of the technical details we will be talking about today.

Department of the Navy Combat Aircraft (Requirements and Inventory)



SOURCE: Congressional Budget Office from Department of the Navy data.

Inventories of planes to meet requirements now total 3,601 now and will rise to 3,863 by 1994, again based on assumptions from the Navy. This means that in 1994, as I said, the Navy will be short 222 planes. The detail shows shortfalls of 12 types of aircraft, offset by small excesses of two types. New shortfalls grow from a level of 157 today to 222 by 1994.

Presumably the Navy can accommodate some level of shortfalls, as it is doing today. Moreover, it can probably do so without deploying aircraft carriers or other units with fewer than their full complement of aircraft in peacetime.

In peacetime only about a third of the aircraft are actually deployed at a given time. The remainder of the requirements meet a variety of other needs. The Navy indicates that requirements for deployed units can be met, for example, by taking planes from squadrons that have just returned from a deployment and giving them to squadrons about to deploy. It is a technique known as "crossdecking." The Navy also says that, at least temporarily, it can reduce the amount of time spent on routine maintenance or reduce planned modifications, thus freeing some aircraft in the pipeline for duty on deployed units.

These accommodations, however, may reduce defense capabilities, particularly in wartime. Crossdecking of aircraft means they fly more in peacetime and thus age faster. Reducing time in routine maintenance may also hasten wearing out the planes. Reducing time for modifications means it is harder to modify the planes to offset technological obsolescense. Perhaps most important, in wartime the Navy would want to immediately deploy many of those units that now are in preparation for deployment. So shortfalls that can be accommodated in peacetime may lead to units deploying in wartime without all their assigned aircraft. Shortfalls would also mean smaller reserves available to replace aircraft damaged in combat.

So I think the shortfalls are best interpreted as exacerbating problems of aging and maintenance in peacetime and potentially reducing capability in wartime. They may also suggest an added expense if the Navy decides it must buy more aircraft to meet those shortfalls.

COSTS OF MEETING SHORTFALLS

The costs associated with buying enough aircraft to meet shortfalls in 1994 would total $8.2 billion in fiscal year 1988 dollars. For at least one of the aircraft, the S-3, we would not be able to buy enough over the next few years to meet shortfalls because the production line is closed. We will have to wait for the V-22.

But the total dollars give you an idea of the long-run costs to meet the shortfall. I might add that the costs are intended as rough approximations of added spending to meet shortfalls, not as an alternative Naval aircraft budget.

AIRCRAFT AGE AND SHORTFALLS

Let me turn next to a discussion of aircraft age, because it plays an important role in the shortfalls. The Navy argues that age of aircraft is also an important indicator of capability and maintainability. By this measure, the Navy's current plans produce an overall fleet that may be modestly less capable than today's fleet. The Navy combat aircraft fleet will have an average age of 12.8 years in 1994, up from 12.1 years today. However, considering only the fighter and attack portion of that fleet—the portion of the fleet for which aging is of most concern—the fleet averages 10.7 years of age today and it will decrease to 10.3 years by 1994. That may suggest a modest improvement in overall capability.

Age is also important in determining the size of shortfalls. Navy plans assume that combat aircraft will be retired at ages ranging from 13 to 37 years, with an average age of 26 years. The details are shown in table 4 on page 11 of my prepared statement.

TABLE 4. NAVY ESTIMATES FOR AIRCRAFT RETIREMENT AGES

	Navy Retirement Estimate a/	Navy Service Life Estimate b/
F-14A	27	18
F/A-18	16	15
F-4	19	19
A-7E	17	17
A-6	32	23
AV-8B	15	15
AV-8A/C	13	13
A-4	33	32
EA-6	37	20
E-2	21	17
S-3A	24	24
SH-3, SH-60F	29	23
P-3	30	30
SH-60B	22	22
SH-2F	34	24
CH-53	28	28
CH-46E/V-22	33	33
AH-IJ/T/W	30	30
Weighted Average c/	26	23

SOURCE: Congressional Budget Office estimates of Department of the Navy retirement ages.

a. Retirement estimate supplied by the Navy in March 1987.

b. Service lives supplied by the Navy in February 1987.

c. Ages weighted by numbers of aircraft in the 1987 inventory.

The Navy argues that by modifying its aircraft, it can keep them to this average age of 26 years. Currently, for example, they are modifying the A-6 and F-14 aircraft.

While modifications may well extend service lives, an average retirement age of 26 years is high by other Navy standards and by the standards of recent experience. For the past few years the annual Naval Aviation Plan has called for retirement of combat aircraft at around 20 years of service. The F-4 aircraft that the Navy has retired so far have left the fleet after about 19 years of service. Moreover, the Navy does not appear to have always used the retirement ages it is now proposing in preparing its 5-year budgets. The Navy had been using these ages last year, when it planned to buy more aircraft, then the service would have been procuring about 230 more aircraft than it needed to meet its requirements.

To highlight the sensitivity of shortfalls to assumptions about retirement, CBO estimated shortfalls based on service lives supplied by the Navy earlier this year. These service lives represent engineering estimates of when planes should retire, whereas the retirement ages that the Navy uses reflect near-term budget constraints as well as plans for aircraft modification. If the Navy were to decide that service lives were the more realistic estimates, the shortfall in combat aircraft would nearly triple to 650 planes by 1994. Using the rough costing method that I discussed earlier, costs to meet that shortfall would be about $26 billion in today's dollars.

CBO cannot judge whether an average retirement age of 26 years is too high or too low, so we have accepted the Navy's plans in the basic estimates in my testimony. Clearly, however, there is some uncertainty about retirement ages and that leads to substantial uncertainty about the future size of aircraft shortfalls.

COMPARISONS OF 1986 AND 1987 PROCUREMENT PLANS

If we use the Navy's planned retirement ages, the main reason for the shortfalls is the Navy's decision to buy fewer aircraft. Each year the Navy supplies you with a 5-year plan for aircraft procurement. That latest plan buys 440 fewer aircraft in 1988 to 1991 than did last year's plan. Generally, the Navy is still planning to buy the same number of aircraft in the long run. What it has done is to stretch out procurement, that is to buy aircraft at a slower rate. The rate of procurement for four planes has been reduced by an average of 50 percent, relative to last year's plan, and only one combat plane, the P–3, has a higher rate of procurement in this year's plan.

Stretchouts lengthen the years that Navy aircraft are in procurement leading to concerns about technological obsolescence. Stretchouts could also add to total costs. Generally weapons bought more slowly cost more per unit than those bought at higher rates.

Estimates provided by the Navy indicate that reductions in aircraft procurement rates, relative to those planned last year, could add $1.7 billion to costs in today's dollars. Those added costs assume that all the aircraft the Navy eventually plans to buy are purchased at the slower rates in today's budget rather than the faster rates in the budget submitted last year.

Let me add, Mr. Chairman, that the stretchouts do save money in the near term. As usual, if you put off the buying, you are going to spend less in the next two years. In the long run, however, they will add to costs, and the estimates that I have given you include these added long-run costs. The amount of long-run added costs also varies with specific assumptions and my prepared statement gives you a range of estimates.

CONCLUSION

Let me summarize my key findings, Mr. Chairman. Given its current planning assumptions, the Navy is not buying enough combat aircraft to meet its needs. Shortfalls in 1994 will be 222 planes or about 5 percent of requirements. If the Navy retired aircraft at 23 years instead of the currently planned 26 years, that shortfall would be about 650 aircraft. Again, the 23 years is more consistent with some Navy planning factors and with recent experience with requirements of the F–4.

These shortfalls result from applying planning factors that could change with actual experience. The Navy may also be able to accommodate some level of shortfall, as it is doing today. But continuing to do so could increase problems associated with aging, and could reduce combat capability in war.

Alternatively, the Navy may change its aircraft budget requests. For example, if the Navy decided that it needed to meet all shortfalls suggested by current planning assumptions, then the added bill would be about $8 billion in today's dollars.

That concludes my statement, Mr. Chairman. Ms. Pierrot and I will be glad to answer your questions.

[The prepared statement of Mr. Hale follows:]

PREPARED STATEMENT OF ROBERT F. HALE,
Assistant Director, National Security Division,
Congressional Budget Office

INTRODUCTION

Mr. Chairman, I appreciate the opportunity to testify today on issues related to Navy aircraft. The Congressional Budget Office (CBO) has been asked by this Committee to study the balance between the Navy's aircraft inventory and its requirements. My testimony today provides preliminary results of that analysis.

Based on assumptions supplied by the Navy, and on the five-year plan for aircraft procurement that accompanies the 1988 budget, the Navy's inventory of combat aircraft will fall short of requirements by a total of 222 planes in 1994, the earliest year when all of the planes procured in the 1988 five-year plan will have been delivered. This shortfall, which equals about 5 percent of requirements, occurs mostly because the Navy plans to buy fewer planes under this year's plan but has not significantly changed its requirements.

The Navy may be able to accommodate these shortfalls, though doing so may adversely affect the fleet in peacetime and even more so in war. If the Navy decides not to accommodate the shortfalls, it would need additional funds for aircraft. The costs of buying planes to meet the shortfall of 222 combat aircraft could total more than $8 billion in today's dollars.

Moreover, the shortfall of 222 combat aircraft assumes that aircraft retire at an average age of 26 years. Planning factors used by the Navy in the recent past call for retirement at an average age of 23 years; actual retirement ages for combat aircraft now being retired (F-4 fighters) average about 19 years. If aircraft were retired at 23 years, it would lead to a shortfall of about 650 aircraft in 1994.

AIRCRAFT SHORTFALLS AND COSTS TO MEET THEM

My testimony this afternoon deals specifically with Navy combat aircraft and helicopters (those bought in the portion of the Navy's aircraft procurement account called Budget Activity 01 or "combat" aircraft). These aircraft are flown by active and reserve pilots and include:

- Navy carrier-based forces;
- Navy antisubmarine warfare (ASW) aircraft and helicopters, including those based on land and on ships; and
- Marine Corps aircraft.

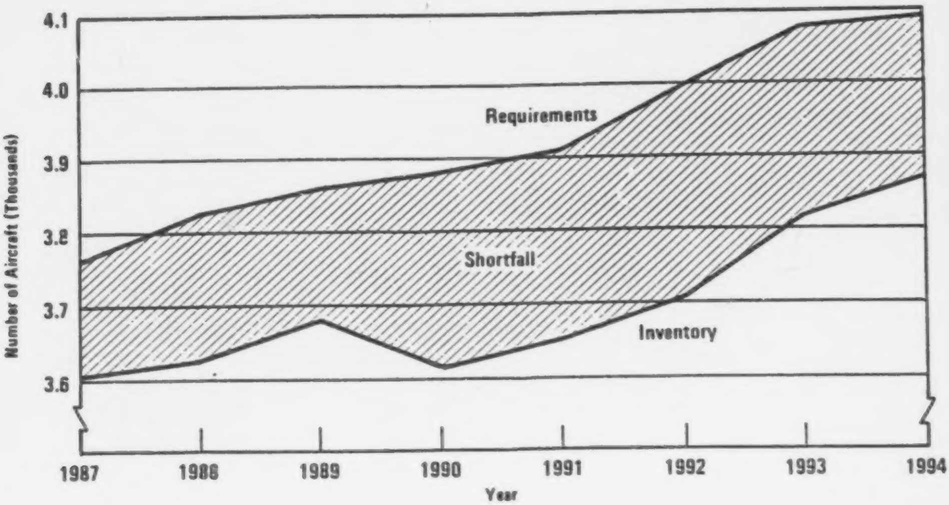
In 1988, procurement costs for these combat aircraft amounted to $6.4 billion or about 65 percent of all Navy aircraft procurement costs.

Projected Shortfalls

The requirements for these forces and for the aircraft that are bought to support them--shown in the requirements line in the accompanying figure--total 3,820 in 1987 and increase to 4,085 by 1994. Most of the increases in requirements result from fully equipping squadrons and wings that have less than their complete complement today. These requirements are based on Navy plans detailing, for example, the required numbers of squadrons and planes per squadron. In aggregate, requirements assume 16 carrier-based air wings (14 active and 2 reserve), 37 land-based ASW squadrons, 4 Marine Corps wings (3 active and 1 reserve), and other aircraft.

Inventories of planes to supply these forces total 3,601 now and will increase to 3,863 by 1994, based on the Navy's five-year budget plan for aircraft procurement and a variety of assumptions supplied by the Navy. These assumptions include such factors as how long planes will be in service

Department of the Navy Combat Aircraft (Requirements and Inventory)



SOURCE: Congressional Budget Office from Department of the Navy data.

and how many will crash per year in peacetime accidents. (The accompanying figure shows the Navy's inventory from 1987 to 1994.)

Comparing the 1994 total for requirements with the 1994 total for inventories--the bracketed difference in the figure--shows that the Navy will be short 222 planes. Details in Table 1 show shortfalls of 12 types of aircraft offset by small excesses of 2 types of aircraft. Net shortfalls grow from a level of 157 in 1987 to 222 by 1994.

Shortfalls in upcoming years may be symptomatic of a longer-run problem. The Navy testified in 1985 that it needed to buy an average of about 350 aircraft a year to meet its needs. In the next five years, the Navy plans to buy an average of only 260 aircraft a year.

Presumably, the Navy can accommodate some level of shortfalls, as it is doing today. Moreover, it can probably do so without deploying aircraft carriers or other units with fewer than their full complement of aircraft in peacetime. Table 2 shows categories of requirements in 1994 for one type of aircraft (the A-6 attack plane). About 67 percent of total required aircraft would be deployed or preparing to be deployed, and only about a

TABLE 1. SHORTFALLS (OVERAGES) OF NAVY AIRCRAFT IN 1994

System	Quantity Short (Over)
F-14	16
F/A-18	5
A-6	61
AV-8	(13)
EA-6	27
E-2	(10)
S-3A	45
SH-60B	10
SH-60F	7
P-3	49
SH-2	9
CH-53	5
CH-46/V-22	4
AH-1	7
Net Shortfall	222

SOURCE: Congressional Budget Office estimates based on Department of the Navy Data.

third of those would actually be deployed. The remainder of requirements is needed for keeping combat squadrons equipped with planes while some are being repaired and modified (15 percent for its "pipeline"), testing new weapons and tactics (2 percent), and providing training for pilots who have never flown combat aircraft or who have not flown recently (15 percent). The Navy indicates that needs for deployed units can be met by removing planes from squadrons that have just returned from deployment and giving them to squadrons that are about to deploy (a technique known as crossdecking). The Navy also says that, at least temporarily, it can reduce the amount of time spent in routine maintenance or reduce planned modifications, thus freeing some in the aircraft pipeline for duty on deploying units.

These accommodations, however, may reduce defense capabilities, particularly in wartime. Crossdecking of aircraft means they fly more in

TABLE 2. CATEGORIES OF AIRCRAFT REQUIREMENTS--FOR THE A-6 IN 1994

Category of Requirement	Number of Planes	As Percent of Total [a]
Deploying or Preparing to Deploy	352 [b]	67
Deployed		
Just back from deployment		
In workup for next deployment (including squadrons coming up to full strength in personnel and squadrons at full strength)		
Maintenance and Modification ("Pipeline")	80	15
Additional Requirements		
Support of research and development and other miscellaneous requirements	12	2
Training squadrons for pilots with no recent flight experience in combat aircraft (Fleet Replenishment Squadrons-FRS)	81	15
Total Requirement	525	100

SOURCE: Congressional Budget Office estimates from Department of the Navy data.

a. Details do not add to total because of rounding.

b. Includes requirements for Marine Corps and Navy Reserve.

peacetime and thus age faster. Reducing time in routine maintenance may also make planes wear out faster, while reducing the time for modifications decreases the Navy's ability to offset technological obsolescence by upgrading older planes to enhance their capabilities. Perhaps most important, in wartime the Navy would want to deploy immediately many units that, in peacetime, are in workup for deployment. Shortfalls that can be accommodated in peacetime may lead to units deploying in wartime without all their assigned aircraft. Shortfalls would also mean small reserves available to replace aircraft damaged in combat.

Thus, I think these shortfalls are best interpreted as exacerbating problems of aging and maintenance in peacetime and potentially reducing capability in wartime. They may also suggest an added expense if the Navy decides it must buy more aircraft to meet the shortfalls.

Costs of Meeting Shortfalls

The costs associated with buying enough aircraft to meet shortfalls in 1994 would total $8.2 billion in fiscal year 1988 dollars. This amount represents costs of about $9.2 billion to meet shortfalls offset by $1.0 billion associated with not buying as many of the two types of aircraft that are in excess. Table 3 provides the additional costs or savings by aircraft type. For at least one of these aircraft (the S-3, which represents $1.6 billion or about 20 percent of the net cost), shortfalls could probably not be filled over the next five years because the production line is closed.

These costs are intended as rough approximations of added spending to meet shortfalls, not as an alternative budget. The costs generally assume that planes are bought at the same unit price that the Navy expects to pay for them in 1992, deflated to 1988 dollars. This unit price implies that shortfalls are met by extending procurement at currently planned rates; costs would be lower if shortfalls were met by increasing production rates. Nor are these estimates based on year-by-year costs, which would take into consideration other factors such as learning-curve effects.

AIRCRAFT AGE AND SHORTFALLS

The age of aircraft is important in determining the size of shortfalls and, the Navy argues, is also an important indicator of capability and

TABLE 3. COST/SAVINGS OF MEETING SHORTFALLS AND AVOIDING EXCESSES (1988 Budget Authority)

System	1992 Procurement Unit Cost (In millions of 1988 Dollars)		Quantity Short (Over)	Cost (In billions)
F-14	73.7	a/	16	1.2
F/A-18	24.8		5	0.1
A-6	35.3		61	2.2
AV-8	20.7		(13)	(0.3)
EA-6	49.8		27	1.3
E-2	68.8		(10)	(0.7)
S-3	36.2	b/	45	1.6
SH-60B	17.1		10	0.2
SH-60F	16.6		7	0.1
P-3	41.4		49	2.0
SH-2	8.9	c/	9	0.1
CH-53	30.8		5	0.2
CH-46/V-22	36.2		4	0.1
AH-1	8.1	d/	7	0.1
Net Shortfall			222	8.2

SOURCE: Congressional Budget Office from the fiscal year 1988 Budget Submission and Navy data.

a. 1989 procurement unit cost deflated to 1988 dollars.

b. V-22 procurement unit cost used as a proxy.

c. 1987 procurement unit cost inflated to 1988 dollars.

d. 1988 procurement unit cost.

maintainability. A younger fleet can better maintain superiority in the face of an increasingly capable enemy threat. It will also be down for repairs less in peacetime, which aids in training, and should be cheaper to operate and maintain. In terms of age, the Navy's current plans produce an overall fleet that may be modestly less capable than today's fleet. The Navy combat aircraft fleet will have an average age of 12.8 years in 1994 compared with 12.1 years today. However, considering only fighter and attack aircraft—the portion of the fleet for which aging is of most concern--the fleet averages 10.7 years of age today and decreases to 10.3 years by 1994.

Navy plans assume that combat aircraft will be retired at ages ranging from 13 years to 37 years with an average of 26 years (see Table 4). The Navy argues that, by modifying the aircraft, it can keep them to an average of 26 years. Currently, for example, the Navy plans to modify older F-14 aircraft and extend their lives, with new engines and avionics designed to meet advanced enemy threats. Similar modifications are also planned for older A-6 aircraft.

TABLE 4. NAVY ESTIMATES FOR AIRCRAFT RETIREMENT AGES

	Navy Retirement Estimate a/	Navy Service Life Estimate b/
F-14A	27	18
F/A-18	16	15
F-4	19	19
A-7E	17	17
A-6	32	23
AV-8B	15	15
AV-8A/C	13	13
A-4	33	32
EA-6	37	20
E-2	21	17
S-3A	24	24
SH-3, SH-60F	29	23
P-3	30	30
SH-60B	22	22
SH-2F	34	24
CH-53	28	28
CH-46E/V-22	33	33
AH-IJ/T/W	30	30
Weighted Average c/	26	23

SOURCE: Congressional Budget Office estimates of Department of the Navy retirement ages.

a. Retirement estimate supplied by the Navy in March 1987.

b. Service lives supplied by the Navy in February 1987.

c. Ages weighted by numbers of aircraft in the 1987 inventory.

While modifications may well extend service lives, an average retirement age of 26 years is high by other Navy standards and those of recent experience. For the past few years, the Naval Aviation Plan--a document published annually by the service to describe its aviation requirements--called for retirement of combat aircraft at around 20 years of service. Retirement ages in the Naval Aviation Plan may be lower than those I discussed earlier because the aviation plan is not constrained by budgets. The F-4 fighter aircraft that the Navy has retired so far, however, have averaged 19 years at retirement. Moreover, the Navy's methods of accommodating shortfalls may make planes wear out faster and decrease their availability for modification, making earlier retirement more likely.

Finally, the Navy does not appear to have always used the retirement ages it is now proposing in preparing its five-year budgets. If the Navy had been using these ages last year, when it planned to buy more aircraft than it now plans to buy, then the service would have been procuring about 230 more aircraft than it needed to meet its requirements.

To illustrate the sensitivity of aircraft shortfalls to assumptions about retirement, CBO estimated shortfalls based on service lives supplied by the Navy earlier this year (see Table 4). These service lives represent engineering estimates of when planes should retire, whereas the retirement ages used earlier represent current plans that may reflect budgets and the Navy's plans for aircraft modification. Planned service lives average 23 years, still greater than the 20-year average in the Naval Aviation Plan but less than the 26 years assumed under current plans. If the Navy were to decide that service lives were the more realistic estimates, then the shortfall in combat aircraft would grow to about 650 planes by 1994. Using the rough costing method discussed earlier, costs to meet this shortfall would total about $26 billion in today's dollars.

CBO cannot judge whether an average age of 26 years is too high or too low and so has accepted the Navy's plans in the basic shortfalls noted in my testimony. Clearly, however, there is some uncertainty about retirement ages that leads to uncertainty about the size of future shortfalls.

COMPARISONS OF 1986 AND 1987 PROCUREMENT PLANS

The main reason for shortfalls of combat aircraft is the Navy's decision to buy fewer aircraft. Each year the Navy supplies the Congress with a five-year plan for aircraft procurement. The latest five-year plan buys 440 fewer aircraft in 1988 to 1991 than did last year's plan. (The years 1988 to 1991 represent the common four years of the two plans.) Generally, the latest Navy plan has not cut back on the total number of aircraft that the Navy eventually plans to buy. Rather this year's plan "stretches out" production by cutting back on the rate of annual procurement. The rate of procurement of four planes was reduced by an average of about 50 percent below last year's rates. Only one combat aircraft (the P-3) has higher rates in this year's plan (21 a year instead of 9).

Stretch-outs lengthen the years that Navy aircraft are in procurement, leading to concerns about technological obsolescence. Assuming currently planned rates of buy, Table 5 shows how many years the Navy will have been buying eight major types of combat aircraft when their planned buy is complete. Four of the eight types will have been in procurement for 20 or more years. One (the P-3) will have been in procurement for more than 30 years. Adding development time means that, when buys are completed, the basic design of most Navy aircraft will be 20 to 30 years old and sometimes substantially more than 30 years. Many of these aircraft have been or will be modified with new avionics, structural enhancements, or other improvements during these long procurement periods. But the basic design of the aircraft limits what modifications can do to accommodate new enemy threats. In particular, incorporating stealth technology--which helps planes evade enemy radars and is receiving great emphasis in DoD's designs for new aircraft--requires a new basic design.

TABLE 5. PRODUCTION PERIODS FOR SELECTED NAVY AIRCRAFT, ASSUMING CURRENTLY PLANNED RATES OF BUYS

System	Years From First to Last Production a/	Year Complete
A-6E/F	24	1993
F-14 A/D	28	1998
F/A-18	17	1995
EA-6	9	1992
E-2C	20	1992
LAMPS	14	1995
P-3 Total Program	36	1995

SOURCE: Selected Acquisition Reports and data from Lockheed Corporation.

a. These production periods exclude the time that these aircraft spent in development. Total program lives, including development, would be much longer in some cases.

Stretch-outs of production could also add to total costs. Generally, weapons bought more slowly cost more per unit than those bought at higher rates. Estimates provided by the Navy indicate that reductions in aircraft buy rates relative to those planned last year would add an average of 14 percent to the unit costs of the four aircraft with slower rates. These results suggest that the Navy's currently planned procurement rates add $1.7 billion in today's dollars to costs (see Table 6). Added costs assume that all aircraft the Navy eventually plans to buy are purchased at the slower rates of procurement in this year's plan rather than the faster rates in last year's plan.

Added costs vary depending on assumptions. One could argue that costs should be based only on aircraft being purchased over the next five years. Under this assumption, added costs amount to $1.1 billion. On the

TABLE 6. ADDED COSTS (SAVINGS) ASSOCIATED WITH CURRENTLY PLANNED PROCUREMENT RATES FOR NAVY COMBAT AIRCRAFT [a]
(In billions of fiscal year 1988 dollars)

	Average Annual Rate of Buy in Plan		
System	Current Plan	Last Year's Plan	Change in Costs (In billions)
	Total Planned Buy (Savings in Recurring Flyaway Costs Only)		
EA-6	8	11	0.1
AV-8	19	37	0.6
F/A-18	73	145	0.8
F-14	12	22	0.9
P-3	21	9	(0.7)
Total	26	45	1.7
	Five-Year Buy Only (Savings in Recurring Flyaway Costs Only)		
Total	27	45	1.1
	Total Planned Buy (Savings in Total Procurement Cost)		
Total	26	45	2.5

SOURCE: CBO estimates from Department of the Navy data and Selected Acquisition Reports.

a. Costs are associated with slowing the rate of buy for four aircraft from the average buy in the plan submitted last year to the average buy in this year's plan. Savings for the P-3 aircraft reflect a faster buy rate.

other hand, all these estimates assume that efficiencies in production affect only recurring "flyaway" costs. (Recurring flyaway costs pay largely for the airframe, engine, and systems that make a plane fly.) Total aircraft procurement costs, which are substantially higher, include funding for initial spare parts, ground support equipment, and other support items. It may be that spare parts and ground support equipment bought at higher rates would cost less per unit. Basing the analysis on total procurement costs and all the aircraft the Navy intends to buy could lead to added costs of $2.5 billion in today's dollars.

CBO intends these as rough approximations of the costs of stretch-outs. We have not reviewed the Navy unit-cost relationships, though they are generally consistent with results of CBO's other work on the costs of stretch-outs done for this Committee. Nor have we estimated year-by-year savings and applied economic discounting.

CONCLUSION

Given its current planning assumptions, Mr. Chairman, the Navy is not buying enough combat aircraft to meet its needs. Shortfalls by 1994 would amount to 222 aircraft or about 5 percent of requirements. If the Navy were to retire its aircraft at an average age of 23 years instead of its currently planned 26 years, shortfalls would grow to about 650 aircraft. Retirement at an average age of 23 years is more consistent with some Navy planning factors and with recent experience with retirement of F-4 aircraft.

These shortfalls result from applying planning factors that could change with actual experience. The Navy may also be able to accommodate some level of shortfall, as it is apparently doing today. But continuing to do so could increase problems associated with aging and could reduce combat capability in war. Alternatively, the Navy may change its aircraft budget requests. If, for example, the Navy decided that it needed to meet all shortfalls suggested by current planning assumptions, added costs would exceed $8 billion in today's dollars.

Alternatives to pay for the added costs of aircraft are beyond the scope of my testimony today. Unless additional dollars are available for the Navy, however, offsetting the added costs would require reductions in operating costs that pay for day-to-day readiness or in investment costs not related to aircraft. Such reductions in investment could lead to the purchase of fewer ships or fewer weapons to put on the Navy's fleet of ships and aircraft.

AIRCRAFT SHORTFALL

Senator LEVIN. Let me just repeat your summary so I can get the whole thing in one thought. You summarized it extremely well. I do not know that I can improve on it except to add one little figure.

Under a 26-year life assumption, shortfall in 1994 would be 220 planes.

Mr. HALE. Now, that would be 650. No, I am sorry, you are right—222 under a 26-year retirement. Exactly.

Senator LEVIN. And under a 20-year life assumption, the shortfall in 1994 would be 660.

Mr. HALE. I said a 23-year average would lead to 650. A 26-year average leads to the 222.

Senator LEVIN. Very good. Now, the cost of fixing the shortfall, in the one case, the 650 shortfall, would be $8 billion.

Mr. HALE. That's the $26 billion.

Senator LEVIN. Pardon?

Mr. HALE. The 650 shortfall is the $26 billion cost, the 222 shortfall is $8 billion.

Senator LEVIN. All right. Those are both in current year dollars.

Mr. HALE. Constant dollars. Today's constant dollars.

Senator LEVIN. Okay. Now, have you compared, as we have talked about before, the savings to the Navy by accelerating the aircraft carriers, and there are some savings obviously when you build now rather than later, compared to the savings if they would keep to their plan for acquiring aircraft and not stretch out and delay those aircraft?

Mr. HALE. Finally I can give you an answer, Mr. Chairman. Let me draw a general conclusion, then I will give you some numbers, and a longish reply if I might.

CARRIER COSTS

As you just put it, there are likely to be some savings from accelerating the purchase of the carriers. And as I have just told you, we think there will be some added long-run costs from delaying or stretching out procurement of the aircraft. I think if you look at those two decisions together, those costs tend to cancel out, sometimes fully or more or less so, depending on the exact assumptions.

Let me give you some figures on the carriers. As you know, GAO is reviewing for you the carrier costs. I think they will be testifying in a few weeks. I do not have their results. The Navy has testified to savings of $3 billion by accelerating the strategy of moving up procurement of the carriers. That number is not comparable to the one I have given you today for aircraft. But, when we put the dollars in comparable terms, the savings from accelerating the carriers procurement from $0.9 billion to $1.9 billion in today's dollars.

The $0.9 billion is associated with savings from essentially maintaining what the Navy calls heel-to-toe production at Newport News. In other words, you launch one carrier and you lay the keel for another, or close to that schedule at least. The $1.9 billion not only includes the heel-to-toe production savings, but also the savings associated with buying two ships at one time—the two-ship strategy.

So the range, given our understanding of the Navy numbers, is $0.9 billion to $1.9 billion. There are a lot of different assumptions you can make. Economic discounting could enter into this. There could be differences in up front costs.

I think if you put the two decisions side by side—the savings for the carriers and the added costs for the aircraft—they tend to cancel out almost fully.

Senator **Levin**. The numbers that you have given in your statement are important numbers for our judgment. Are these numbers that you and the Navy agree upon?

Mr. **Hale**. I think that we have reached agreement, again after a lot of work with them and their cooperation, on the size of the shortfalls. Or, at least we are close to agreement. Obviously Admiral Dunn will want to put his interpretation on those shortfalls and explain how he would accommodate them.

As for the costs of the stretchouts, we are using Navy estimates for the aircraft. So I think that, yes, we have reasonable agreement on the numbers.

Senator **Levin**. On the hard line, bottom line numbers. Not necessarily on the implications in numbers or how to overcome numbers, but in terms of the numbers themselves.

Mr. **Hale**. I think that is right.

Senator **Levin**. Now, there have been stretchouts on a number of planes, including the Navy's planes. I am wondering if you can tell us in what cases are there actual reductions in production for 1988?

Can you give us instances where——

Mr. **Hale**. You mean where production fell in 1987? Could we look that one up? I do not have it on the tip of my tongue. Would you like to go on and we will get this for you or do you want to give us a moment to look it up?

Senator **Levin**. Well, you can supply that.

Mr. **Hale**. Or in just a moment we could supply it for you verbally.

AGE OF AIRCRAFT

Senator **Levin**. Has the Navy changed their requirements in terms of the age of aircraft, do you know? Is there some strategic or policy decision that went into that, or is that just a fiscal decision?

Mr. **Hale**. I think that is a question better addressed to Admiral Dunn. They have——

Senator **Levin**. Did you ask him that?

Mr. **Hale**. Yes. We talked a good deal about ages. My understanding is that the Navy's currently planned retirement ages reflect not only recent experience in their view, but, perhaps most importantly, that they are planning to try and modify some planes—the A-6 and F-14 being prime among them—in order to extend their service lives. I think no one will know how that is going to work until the modified plane is in action for a few years. But that is their hope and that is one of the main reasons they have given us for assuming longer retirement ages than we have used in the past. What we tried to do for you is to run both of them through our models so you get a feel for the effects on the shortfalls, and they are substantial.

Senator LEVIN. The bottom line, even using their more optimistic assumption, you got a shortfall of 220 planes.

Mr. HALE. Yes. Mr. Chairman, can we answer your question about what has gone down just briefly?

Ms. PIERROT. Four planes had reductions in procurement quantity from 1987 to 1988. They were the EA-6B, the AV-8B, the SH-60B and E-2C.

AIRCRAFT PROCUREMENT

Senator LEVIN. Let me put those in my language. On the F-14, as I understand it, we are in 1987 procuring 15 and the request is for 12 in 1988. Is that correct?

Mr. HALE. Yes, you are right.

Senator LEVIN. Did you hear my question?

Mr. HALE. Yes, you are right. There should be five.

Senator LEVIN. I did not say five.

Mr. HALE. Well, you should add the F-14.

Senator LEVIN. Let me start again, because I missed something.

Mr. HALE. Sorry.

Senator LEVIN. The 1987 production of the F-14, as I understand it, is 15. Is that correct?

Ms. PIERROT. Yes.

Senator LEVIN. Pardon?

Ms. PIERROT. Yes.

Senator LEVIN. And the budget request is for 12?

Ms. PIERROT. And the budget request is for 12.

Senator LEVIN. The AV-8B, the 1987 production is for 42. Is that correct?

Ms. PIERROT. Yes sir.

Senator LEVIN. And the 1988 request is for 32?

Ms. PIERROT. Yes sir.

Senator LEVIN. The EA-6B production in 1987 is for 12. Is that correct?

Ms. PIERROT. Yes.

Senator LEVIN. And the request is for 6?

Ms. PIERROT. Yes.

Senator LEVIN. You have to give a verbal answer because—and the 1987 production of the E-2 is 10.

Ms. PIERROT. Yes sir.

Senator LEVIN. And the 1988 is 6?

Ms. PIERROT. Yes.

Senator LEVIN. Okay. Now, Senator Cohen.

AIRCRAFT CARRIER/FIGHTER AIRCRAFT TRADEOFF

Senator COHEN. I have a couple of observations, Mr. Chairman. You are not passing any judgment in terms of what the tradeoff is between the aircraft carriers and the additional fighter aircraft, are you?

Mr. HALE. No.

Senator COHEN. I think you have indicated that, as a matter of fact, the savings that the Navy projects on the aircraft carriers is roughly equal to the savings of increased production of the aircraft.

Mr. HALE. There is a wide range of possibilities there, Senator Cohen. Having looked at a variety of numbers, I think that they do tend to offset each other. The exact relationship is going to depend on a whole lot of assumptions.

Senator COHEN. But in your judgment they are roughly equal, are they not?

Mr. HALE. There would be a number of cases. I am not trying to be difficult but we have got a wide range and I think that we do not yet know how say GAO is going to come out in looking at the Navy aircraft carrier savings. In my statement, we have even presented you with a fairly wide range on aircraft stretchouts, depending on what assumptions you make. If we start tossing discounting in there, it gets worse. But I can tell you this: they always tend to cancel out at least partially.

Senator COHEN. Basically a wash. Okay, is that fair to say? It is basically a wash on the aircraft carriers, versus the increased production of the aircraft.

I would like to turn to the question about the Navy reducing its planned production this year. The implication is that the Navy is doing this in order to make room for the aircraft carrier when in fact last year, as I recall, the Navy had a request of some 120 F-18s and 84 were appropriated. Is that in your calculation?

In addition to that they had a request for 238 this year. Last year they got 239. So they really are tailoring their own FYDP to comport with what Congress has been willing to spend for it, is it not?

Mr. HALE. Who has done this is something you are better able to judge.

Senator COHEN. Well I will tell you we appropriated enough money——

Mr. HALE. But you are right. Congress cut the F-18 last year from 120 to 84. There is no question about that.

Senator COHEN. So what the Navy is doing is saying, it is realistic in view of what is happening with the budget, and we are told we are not getting 10 percent increases anymore, or 5 percent real growth, not even 3 percent. We are looking at maybe 1 percent or zero growth.

They are trying to come up with a realistic proposal and saying, here we have got exactly what you have given us last year, maybe one less aircraft.

Mr. HALE. The neutral and nonpartisan side of me says, they could have done it differently. They could have come back and said, I really want the aircraft and I will try to fit that in instead of moving the carriers up. But I accept your judgment that——

Senator COHEN. If you are neutral, you do not make any decisions. Right? If you are neutral you have no military judgment to make.

Mr. HALE. I do not. I am not here to judge whether you ought to buy the carriers now and the aircraft later or vice versa.

Senator COHEN. You mentioned before a discount. You did not calculate any discounted figures in here, did you?

Mr. HALE. We have done so, but there are none in my testimony. We have looked at discounting. At the rate CBO typically uses, I think that it does not change the story that there are some savings from the carriers offset by the planes. If you like I can give you some numbers, but I think the bottom line——

Senator COHEN. Would you?

Mr. HALE. At 2 percent, a real discount rate that CBO often uses—a nominal rate equivalent to say 5 or 6, depending on inflation—the $1.7 billion in added aircraft costs comes down to a discounted figure of $1.1 billion. The cost is reduced because discounting gives you credit for pushing off the buys. On the carrier side, the $.9 billion in savings comes down to $.3 billion, at a 2 percent real discount rate. So I think that the story is the same. We have got some offset in costs and savings; whether they offset exactly depends on exactly what assumptions you make.

Senator COHEN. What would the rate of production have to be in order to achieve the savings that you have calculated?

Mr. HALE. We would have to take those four planes and roughly double their average rates of production over the 5 years. Relative to last year's plan, we cut by about 50 percent. Again I am not espousing that action. We did it to show the results of buying the total numbers of planes desired by the Navy under today's plan for rates and then under last year's rates. If we did that, for those four planes, the rates would roughly double. And that is the basis of the $1.7 billion.

Senator COHEN. But that is not a reasonable assumption, is it?

Mr. HALE. I suspect that it would be difficult to find the upfront dollars. I suppose I, in my neutral and nonpartisan suit, should not say whether it is reasonable or not.

Senator COHEN. So we have to approve all of the aircraft production rates projected in last year's five year defense plan in order to achieve these savings?

Mr. HALE. That is correct.

Senator COHEN. And that historically has not occurred.

Mr. HALE. We certainly have tended to stretch out rates from what the administration has planned.

Senator COHEN. That is all I have, Mr. Chairman.

Senator LEVIN. Thank you, Senator. Senator Nunn.

Chairman NUNN. I will pass right now.

Senator LEVIN. Senator McCain.

Senator MCCAIN. Thank you, Mr. Chairman.

AGING AND OBSOLETE AIRCRAFT

I was really intrigued, I must say, by your and Senator Kennedy's opening statements, which I believe said that the Navy will be having aging and obsolete aircraft on board our aircraft carriers.

Perhaps you missed the point made here in the CBO report that says, however, considering only fighter and attack aircraft portion of the fleet, for which aging is of greatest concern, the fleet averages 10.7 years of age today, and decreases to 10.3 years in 1994.

I think we are all aware on this committee that the major portion of an aircraft carrier her assets is composed of fighter and attack aircraft. Of the most important aspect of the aircraft carrier is the fighter attack versions.

Mr. Hale, I will try and point out some of the areas where I think you have missed the mark in your study by a great deal.

Let me first point out that it appears to me that the bottom line, already stated by my colleague from Maine, is that the savings on the CVN versus aircraft are a wash. We need to spend $8 billion to $9 billion to save $1.5 billion to $2.5 billion on aircraft, and we will spend $6 billion to $7 billion on carriers to save $1 billion to $2 billion.

Also there is what appears to me to be an attempt to slant this report in a fashion which I do not think is fair to the Navy, particularly in light of the fact that this year the Navy requested $6.5 billion.

Last year only $5.9 billion was appropriated. The Congress does make the decisions as to how many of which aircraft are to be purchased, all too often without enough consultation with the military. I think history will bear me out as far as that assertion is concerned.

I wonder, Mr. Hale, have you checked on the other armed services to find out what their shortfall is going to be in the year 1994 as far as combat aircraft are concerned? I refer particularly to the Army helicopter force.

Mr. HALE. We have not looked at that in detail.

Senator MCCAIN. I think you might be interested to note that you will see those same shortfalls in the Air Force and the Army and the Marine Corps, for the same reasons why the Navy is going to end up with a 5 percent shortfall.

As I say, let us not forget the fact that the age of the cutting edge of the aircraft on board aircraft carriers in 1994 will be less than the age of the aircraft that are on board them today. That, in my opinion, should have been the major conclusion of your report.

You mention that if the Navy would decide that service lives were the more realistic estimates, this is an example, more realistic estimated, then the shortfall in combat aircraft would grow to about 650 by 1994. Those are not realistic estimates, Mr. Hale, they are your estimates.

Mr. HALE. No sir, they are not.

Senator MCCAIN. Let me finish my speaking, please. You are adding the caveats above in your report, not the military. The Navy is telling you what their estimates are, and you are saying that your estimates are more realistic. Please respond.

Mr. HALE. The service life estimates that you refer to were sent to us in a signed letter by the Navy in February. They are Navy estimates used in program and planning. We tried to be clear, and I am sorry if we were not, that they are service life estimates based on engineering estimates of when the aircraft might retire, and they do not therefore take into account planned modifications and so forth.

So because we felt the Navy was the best judge ultimately, we used the longer retirement life, the 26-year average, in our basic estimates. We felt that to be clear to the committee, we should show you what would happen under both sets. But I want to emphasize that the basic numbers I quote at the beginning and end of my testimony, the shortfall of 222, use the Navy's currently planned retirement ages.

Senator McCain. I think you also might find, if you went back in the history of Navy, Marine, and Air Force aircraft and also Army, you will find that generally speaking they served longer than their programmed ages that they were built for when they were manufactured.

As technology has improved we have been able to extend the lives of aircraft considerably than we had originally planned for through various programs. That is another item that I did not see in your report.

On page 13 you say, stretchouts lengthen the years that Navy aircraft are in procurement, leading to concerns about technological obsolescence. There are great concerns about technological obsolescence, but I think it is also very clear that when aircraft are manufactured today there is ample space and accommodations put into it for advances in technology.

Look at the A-6, for example, and the difference between the original A-6 and its capabilities across the board, particularly where ECM and other high tech aspects are concerned. As the state of the aircraft now, I think the case can be made with almost every aircraft.

Now there may be obsolescence as far as wear and tear on the aircraft is concerned, I would agree with you. But again technologically history indicates that the services, when given sufficient funding by the Congress of the United States, have been able to keep up technologically very well and there has been very little problem with the air frame itself being able to accommodate those technological changes, which were required for them to keep up with the state of the art in modern day air warfare.

I also might add that the aircraft that the United States produces, both Navy and Air Force have proven themselves in combat on several occasions in recent years as to their capabilities vis a vis the Soviet threat that they face, both in the Middle East and other parts of the world.

Mr. Chairman, I am sure I have exceeded my time, but I think it is very important that we understand that the Navy, at least attack and fighter aircraft, will not be older, in fact they will be younger in 1994.

The reason I believe that we can assume that those other aircraft will be the age that they are will be directly as a result of congressional action, which I think history indicates certainly in recent years there has been a significantly smaller number of aircraft appropriated for than requested by the Department of Defense.

I think that is an important viewpoint, when we consider this issue: two aircraft carriers versus increased production of Navy tactical aircraft. I thank the Chairman for his indulgence.

Senator LEVIN. Thank you, Senator. Senator Humphrey.

Senator HUMPHREY. I will pass for the moment.

Senator LEVIN. One of the questions of Senator McCain related to the fact that you studied the Navy aircraft but not the Army aircraft. Were you asked to study the Navy aircraft?

Mr. HALE. Yes.

Senator LEVIN. Were you asked to study the Army aircraft?

Mr. HALE. No. Not by this committee.

Senator LEVIN. When you looked at the average predicted age of these aircraft, as I understand it you looked at it both ways, two ways. And you used the Navy's figures for what their prediction was. Is that correct?

Mr. HALE. You mean when they would be retired?

Senator LEVIN. Yes.

Senator HALE. Yes, that is right. In the basic estimates we presented—in the 222, shortfall—we used the Navy's current plans for when they intend to retire these aircraft. We also showed the case using the Navy's service life estimates that we got about a month earlier. These are programing and planning estimates, but the Navy told us it felt that these estimates did not fully take into account planned modifications and so forth. We felt that we ought to show you the range since, as I say in my testimony, I think CBO cannot judge which are the appropriate ones. But both of them are Navy estimates.

Senator LEVIN. But it is the shortfall of the 220 is based on the Navy's current plans.

Mr. HALE. That is correct.

Senator LEVIN. And presumably the Navy takes into account their own history.

Mr. HALE. Yes. Presumably. And those plans, I think, also reflect what they expect to get out of the modifications, that is the extra service life for the F-14 and the A-6, for example, that will be obtained because they are modifying them.

Senator LEVIN. Okay. Senator Cohen, do you have any further questions?

Senator COHEN. No, Mr. Chairman.

Senator LEVIN. Senator Warner, I guess you would be next.

Senator WARNER. Thank you, Mr. Chairman. I will yield my time to Mr. Cohen and Mr. McCain here for any further questions that they might have.

Senator LEVIN. Senator Humphrey, you would be next if you have any questions. If not, Senator Thurmond.

Senator THURMOND. I will pass for the moment.

Senator LEVIN. I think that is all.

Senator COHEN. I have just one point to make.

FISCAL YEAR 1988 FUNDING FOR NAVY AIRCRAFT

If we increase the funding in fiscal year 1988 for the Navy aircraft to achieve your supposed savings, we would add the following:

$108 million for EA-6, $155 million for AV-8Bs, $917 million for F-18s, $253 million for F-14s, and about $300 million for P-3s.

This totals about $1.5 billion. That is less than half the amount in the budget for the carriers in fiscal year 1988.

Mr. HALE. The numbers sound about right in the aggregate. I cannot check them in detail.

Senator COHEN. That is all, Mr. Chairman.

Chairman NUNN. How much is in there for carriers in fiscal year 1988?

Mr. HALE. $644 million.

Senator LEVIN. So you are saying overall over the 1988-1989 period, it is a wash or when was it a wash?

Mr. HALE. If we went back to last year's procurement rates in constant 1988 dollars, the 5-year total additional cost would be about $7 billion. I did not do the 1988 figures for 1988 alone, but Senator Cohen's number sounds about right.

As far as the carriers go, over 5 years in constant dollars they would have added, relative to last year's plan, $4 billion to $4.5 billion over 5 years because we do not pay for the second one fully until 1993. Including 1993, it was around $5 billion or $5.5 billion. Relative to this, going back to last year's plan, the added near-term cost for aircraft are somewhat higher. However you do not have to go back to last year's plan to have savings equal to those associated with the carriers. You can do some version of it. We did not look at all the options, as I said at the beginning.

Senator LEVIN. Over what period then is it a wash?

Mr. HALE. To make it a wash, you could not go back to last year's plan for aircraft. You would have to go back to something less than that, which would decrease somewhat the added costs of aircraft. Thus you would still be stretching out some, relative to last year's plan, in order to make it a wash. I do not have the exact figures.

Senator COHEN. Could I ask one other question? Could you tell me, how much we are apt to spend to achieve the $1.7 billion to $2.5 billion savings?

I think you indicated $8.2 billion to buy 222 aircraft, the shortfall, but you do not say how much we have to spend on the 440 aircraft.

Mr. HALE. The added costs of going back——

Senator COHEN. That is where you projected your savings.

Mr. HALE. To project the savings, we said let us buy what the Navy wants, as far as total aircraft go. But let us do it at last year's rates. If you were to do that, if you went back to last year's rates, over the next five years you would add about $7 billion in 1988 dollars to the plans the Navy now has for aircraft. I think that is the best way to look at this cost, because that is what the $1.7 billion was based on. In the long run, you would avoid costs, because the unit cost would be lower. But in the near term, as always when you speed production, it would cost more. Spend now to save later.

Senator COHEN. And the price of the two carriers would be how much?

Mr. HALE. The added costs over the next 5 years—relative to last year's plan and there was some money in the fifth year for carriers in last year's plan—is about $4.5 billion in constant 1988 dollars. Over six years, because we pay for the second carrier in 1993 or the last big increment of it, it would be more like $5.5 billion.

Senator **COHEN**. So again, it comes back to the wash.

Mr. **HALE**. I think that is right. I am nervous as an analyst because you can pick assumptions that do not produce a wash, but I think it is a fair bottom line.

Senator **COHEN**. But you do pick assumptions.

Mr. **HALE**. You are right.

Senator **COHEN**. Thank you.

Senator **LEVIN**. Thank you, and thanks to both our witnesses.

AIR FORCE/ARMY SHORTFALL

Senator **MCCAIN**. Mr. Chairman, perhaps we could get for the record an estimate from CBO the shortfall that the Air Force and the Army is predicting, if any. That might be helpful.

Senator **LEVIN**. You might take a look at the Army prediction of their own shortfall, which we have. It might save you some time. We do have that for the record. Indeed there is a severe shortfall in the Army, which has been of some concern to many of us.

Mr. **HALE**. We are looking at the Army aircraft, could I have permission to submit that when we finish that? But it will be a number of months from now. I am not sure that we are going to have that soon.

Senator **LEVIN**. Well, we do have an Army estimate, if you could at least take a look at that and see if you could put your imprimatur on that one, that would be helpful. Then what was the other part of your request?

[The information follows:]

ARMY SHORTFALLS

The Congressional Budget Office (CBO) has reviewed the helicopter shortfall numbers provided to the committees by the Army. They appear to be reasonable projections of the shortfalls the service will experience without increased procurement or decreased force requirements. As CBO has not reviewed the Department of the Navy's utility helicopter requirements, the most comparable number to the 222 aircraft shortfall shown here for the Navy would appear to be the Army's AH-64 shortfall of 438 aircraft. Should the Army receive funding for purchase of an additional 438 AH-64s during the next 5 years—an alternative mentioned by General Thurman in his testimony before the committee—then no AH-64 shortfall will exist.

Senator **MCCAIN**. And the Air Force.

Mr. **HALE**. We have looked at the Air Force in the past.

Generally I do not think you are going to find any substantial shortfalls there, in part because they have cut down on their goal of going to 40 tactical fighter wings. I think that is a fair statement. I do not think you are going to find any substantial shortfalls in the Air Force.

Senator **COHEN**. Well, if you cut down the goal, then you can always measure up to it.

Mr. **HALE**. That is true. [Laughter.]

Senator **COHEN**. That is terrific. If the Navy revises its goal, we can say they are in full compliance.

Mr. **HALE**. That is right. You are right.

Senator **MCCAIN**. And the Marine Corps.

Mr. HALE. And the Marine Corps. Well the Marine Corps numbers are included in these, Senator McCain.

Senator MCCAIN. Thank you very much.

Senator THURMOND. Are you recommending any one weapon over another?

Mr. HALE. No. We are not making recommendations of a particular weapon, Senator Thurmond.

Senator THURMOND. For instance, some people feel that submarines can do more good than some aircraft in the matter of security. I just wondered if you had made any study on one weapon as contrasted with another.

Mr. HALE. No, we have not. We were focusing on how many aircraft the Navy says it needs and how many it had in its inventory, or will have in its inventory.

Senator THURMOND. Thank you.

Senator LEVIN. Thank you very much.

Admiral Dunn and General Smith, let me welcome you both to the committee.

I would just indicate to the committee that the order of today's hearing was a result, as I understand it, of your preference that you come second so in case we had to go classified we could go into a classified session.

We thought it might be easier to put you second today rather than first so that we would accommodate that executive session if necessary.

Admiral DUNN. Yes sir, and I thank you for that.

Senator LEVIN. You may proceed.

STATEMENT OF VICE ADM. ROBERT F. DUNN, DEPUTY CHIEF OF NAVAL OPERATIONS, DEPARTMENT OF THE NAVY, ACCOMPANIED BY VICE ADM. JOSEPH WILKINSON, USN, AND LT. GEN. KEITH A. SMITH, USMC

Admiral DUNN. Mr. Chairman, distinguished members, I appreciate the opportunity to appear before you and present the fiscal year 1988–1989 aircraft procurement Navy budget.

This is my first time before this committee in my current capacity. I did appear four years ago as the Chief of Naval Reserve. I have with me today, as you indicated, Lt. Gen. Keith Smith, the Deputy Chief of Staff for Aviation in the Marine Corps, and Vice Adm. Joe Wilkinson, who is the Commander of the Naval Air Systems Command. My most recent duty was as Commander of Naval Air Forces down in Norfolk.

Both General Smith and I have detailed statements, and with your permission we will submit those for the record.

Senator LEVIN. They will be made part of the record. Thank you.

Admiral DUNN. Thank you, sir. I look forward to the opportunity to address the inventory shortfalls presented by Mr. Hale. But first I would like to spend just a couple of minutes talking about key elements in our APN program, which I believe might be of particular interest to the committee. General Smith then has a short statement about Marine Corps matters.

First of all I would like to share with you my goals for Naval aviation for fiscal years 1988–1992. I recognize they are not all

APN related, nevertheless they are important to me and I think important to this committee.

My first priority is to accommodate the growing Navy and the commensurate growth in Naval aviation. We need your support in increasing our personnel end strength in order to man the squadrons and the ships that are coming into the inventory, particularly the squadrons as they relate to Naval aviation.

My second priority is to advocate, as strongly as I can, the absolutely essential need for getting started with the two replacement aircraft carriers, which have been the subject of a previous discussion.

I want to maintain the readiness of Naval aviation at the current high levels, levels which we have achieved with the support of this committee and the rest of Congress.

I would like to see improvement on the best Naval aviation safety record we have ever seen. We want to upgrade wherever possible the 14 active, two Reserve airwings, the three active Marine and one Reserve Marine airwing, and the 37 Maritime patrol squadrons in the rest of Naval aviation.

Included in that is a continued modernization of the Reserve forces, which is important to us. We want to make major capability upgrades to certain aircraft, notably the A-6, the EA-6, the F-14, the P-3, the S-3 and the E-2.

The APN plan in the President's budget is, as has been noted before, an austere procurement plan. But it is heavily weighted toward combat aircraft, and that is reflected in the fact that the age of the fighter and attack aircraft is in fact decreasing.

We are trying to adjust to this austere plan by buying smart, using all the available tools, such as multiyear contracts, fixed price contracts, hard-nosed negotiations, competition breakout, things Admiral Wilkinson can talk about in detail.

But affordability tradeoffs were necessary throughout the Navy budget in order to arrive at the APN budget, which I am presenting to you today.

Since the submission of the President's budget, three requirements have emerged which require priority attention. We have recognized the need to accelerate replacement of the wing for the A-6E aircraft, based on a recent fleet mishap.

We need a new center section for the E-2 wing to replace some wings that have developed cracks. And we have recognized the need to expedite replacement for the A-3 signals intelligence aircraft.

As far as the A-6 rewing is concerned, we originally structured a program that allowed for a timely replacement of wings within the constraints of the fleet commitments. But we have now recognized, because of those mishaps, that we must accelerate the program and we hope to work with you to redistribute APN-5 funding to accommodate an accelerated wing replacement.

Concerning the E-2C wing fatigue cracks we now have seven aircraft grounded and an additional 10 are restricted from carrier operations. After extensive review we found that the best course of action is to replace the entire center wing section.

As of now we estimate about 15 aircraft will be grounded by the time the fix commences late this year. If we can stick to our plan we will have none of these aircraft grounded by July 1989.

The President's budget included a plan for competing aircraft as a replacement for the A-3. The A-3 airframe is quite old and has reached the end of its carrier life. We have a number of those aircraft that are actually restricted from making carrier landings, and replacement parts are unavailable. It has very poor carrier landing characteristics and we have recognized that the S-3 Viking is the optimum airframe to adapt to this mission.

We have a logistic support structure for the S-3 aircraft. There would be the least impact to squadron maintenance manning by introducing the S-3 aircraft as a tactical signals intelligence aircraft. It has the ideal range, speed and endurance capabilities and above all it is the most expedient alternative.

By converting 16 S-3 aircraft to the ES-3, we get an 18 month jump on the schedule that we would have if we went for the competition. It appears to us to be the most cost-effective alternative.

As far as Mr. Hale's statement is concerned, as he said, we agree on the facts. We are in essential agreement on the numbers. I think he did a good job of putting the numbers together, and I am prepared to respond to his statement as you wish. There are differences of opinion, however, based mostly on differences in assumptions and definitions, and I would be happy to address those. I would also be happy to address how we got to this situation of a shortfall to requirements and how we intend to manage the shortage.

In summary, I would like to reiterate that we have submitted what I consider to be a balanced program within the limits of affordability. It is a challenge for us to execute this budget and maintain our readiness, but we in the dark blue uniforms think we can do it, and naval aviation will continue ready to fight and win if we are called upon to do that. Now Lieutenant General Smith would like to follow on with a few comments.

[The prepared statement of Admiral Dunn follows:]

PREPARED STATEMENT OF VICE ADM. ROBERT F. DUNN

Deputy Chief of Naval Operations (Air Warfare)

Mr. Chairman and distinguished members of the committee, it is a privilege to present the Navy's fiscal year 1988 and 89 aircraft procurement request. In my brief discussion, I intend to describe how this budget request supports our national objectives and maritime strategy. In doing so, I will emphasize some of my concerns and point out how we plan to correct them.

Naval aviation is absolutely vital to our Navy's ability to counter aggression successfully and to protect vital sea lanes. The mobility, flexibility and firepower of our carrier battle groups remains essential in support of our policies around the world, especially in countering terrorism and dealing with emerging conflicts in remote areas. But seapower encompasses much more than carrier battle groups, naval aviation, or even just naval power. It comprises many elements that enables this sea-dependent nation to project its political, economic, and military strengths seaward, and to extend and maintain them beyond the seas. The true strength of a sea-dependent nation can be measured in terms of its ability to use the sea in the furtherance of its national objectives.

The United States, as an island nation, requires the ability to influence favorably international affairs. The deployment of U.S. Navy sea control forces so far from continental U.S. bases and in close proximity to hostile bases and operating areas is one of the most demanding requirements placed upon the capabilities of the U.S. naval forces. These forces must be able to counter air, surface, and submarine threats simultaneously inasmuch as the enemy can select the method of attack. The aircraft carrier serves as the pivotal member of a powerful, mobile naval task force, employing antisubmarine aircraft, attack and fighter aircraft, and surface and sub-surface escorts. The carrier battle group possesses the mobility to operate where it can be most effective against any forces threatening the free use of the seas, and it must have the sensors and weapons needed to defeat these threats.

Today's aircraft carrier is a completely outfitted and equipped mobile air operating base for projecting power ashore. This function requires close air support and interdiction aircraft. These aircraft must be able to defeat all modern aircraft; penetrate to missile-defended targets; conduct precision day, night, and all-weather bombing; and also perform the demanding tasks of reconnaissance and surveillance. Additionally, the carrier battle group must be able to protect convoys carrying troops, supplies, and vital war material. To do this, the task force uses a combination of surface, subsurface and ship-based aircraft and helicopters augmented from shore, where possible to ferret out the growing number of hostile submarines and destroy them. Moreover, the maintenance of a presence in troubled areas of the world is of vital importance in preventing the outbreak of conflicts which may be detrimental to U.S. interests. The carrier task force must possess the capability to respond quickly in areas where U.S. interests require a military presence.

Naval forces have unique flexibility and mobility. For deterrence or response, Naval forces provide precise capabilities at varying levels of hostility. These qualities permit the national leadership to tailor application of force to a particular crisis.

In the event of a superpower crisis, the forward-deployed Navy will provide the Soviets with a compelling disincentive for escalation. For naval aviation, this means that a great premium will be placed on the fleet's ability to strike vital Soviet targets in a high threat environment. The Navy's greatest contribution during a crisis situation could well be the uncertainties registered in the Soviet decision-makers' minds by the fleet's mobility and therefore potential proximity to key Soviet installations.

If deterrence fails, options must be available for early offensive action to destroy enemy maritime forces as far forward as possible, aggressively protect the SLOC's, support and influence land battles and terminate the war. Naval aviation must evolve to accommodate the greater importance our Maritime Strategy places on the aircraft carrier striking power, Marine amphibious assault warfare, and anti-submarine warfare. Our modernization strategy for naval aviation does this.

As Deputy Chief of Naval Operations for Aviation, I intend, with your support, to allocate the scarce resources available to support the Maritime Strategy. This allocation process begins with an assessment of where we are today.

STATE OF NAVAL AVIATION

Naval aviation, 75 years old, is stronger than it has ever been, never more mission ready, never more ready to fulfill its role. It has been in the newspapers, it has been on television and those of you who have had an opportunity to visit the fleet know that it's true. Ships are steaming, aircraft are flying, and sailors are smiling. Morale has seldom been better and readiness is at an all time high. Accidents are at an all time low. People quality is up. All commitments are being met. The 1985 success in intercepting the ACHILLE LAURO pirates, and our 1986 success in the Gulf of Sidra, including the effective strike in concert with the USAF on Libyan targets, are now history. Meanwhile, carrier Task Forces continue to deploy to all oceans of the world. They are naval aviation. They are that strong and dedicated aviation force which is satisfying the requirements of fleet commanders, unified commanders in chief, and generating pride and confidence in the people of this great nation. Naval aviation is the air superiority and tactical air power resident in the multi-mission, all weather, integrated air wings which reside on today's U. S. Navy aircraft carriers--the centerpiece and focal point of conventional power in our Navy.

Naval aviation is stronger and more ready for several reasons. First, there has been tremendous support. There has been support from Congress and the administration who wanted to restore our sagging national defense and there has been support from the people of the United States. That support has provided the funding to recruit the right kind of people and provided those people with: the right kind of training; enough spares to fix aircraft components when they do fail; and support equipment for adequate maintenance of aircraft and ships.

Another reason for recent successes lies in better understanding of mission. Those in uniform certainly know that their mission is: "First to deter all potential aggressors but, when necessary, to fight and win at sea if called upon to do so." But that is not enough. They also have to understand when they might be called upon and how they would have to employ the Maritime Strategy. The strategy is articulated and understood by the people in the Navy. It is a strategy which is integrated with the strategies of the other services, and is accepted by Congress.

Understanding of our Maritime Strategy produces tactical awareness; whether fleet commander or a member of the most junior and smallest unit in Navy Aviation, all have become tactically aware. Those whose job it is to do so are studying, developing and practicing tactics. Naval aviation has never been as tactically proficient as we are today. Dramatically improved readiness has resulted from that understanding of maritime strategy, from vastly improved tactical awareness, and from adequate funding to train as required.

Improved readiness also results from highly sophisticated training programs which are either new to naval aviation or have been rejuvenated--institutions such as Navy Fighter Weapons School of TOP GUN fame; the Navy Strike Warfare Center at Fallon, Nevada; and the newly established ASW Training Group Atlantic, sometimes referred to as ASW University. We are conducting more training with Marine Corps Air Warfare Training Center at Yuma, Arizona; with the Air Force around the country; and with the Army, learning and improving upon interoperability. Combined exercises with allies--the Canadians, the British, the Germans, the Italians, the Japanese, and others have become more frequent and more complex.

Finally, we have aggressively pursued the concept of conservation of scarce resources. We are seeking to make every Navy person aware of the cost of the people and things that the taxpayers provide. We are reinforcing the need to conserve our equipment and not treat it as though it is "just a piece of government gear," but give it the same tender, loving care as one would a brand new automobile just off the showroom floor, paid for with one's own dollars. Such awareness is paying off. All of these efforts have combined synergistically to produce a naval aviation force that has never been better, and never more ready to do the job; but be assured that that force is not resting on its laurels--it is not standing still.

There are many other facets of naval aviation which continue to out-perform all expectations. Maritime Patrol and carrier based ASW squadrons are actively tracking Soviet submarines and supporting American interests worldwide. Our Reserve VP squadrons have been fully integrated into the active deployment rotation and are superb in every respect. The MK III LAMPS ASW helicopter has been a significant improvement for our active ASW ships and the LAMPS MK I helicopter on Reserve ships is being substantially upgraded. These one and two aircraft detachments provide the surface ASW screen over-the-horizon eyes and ears for better detection of quiet Soviet submarines.

Underlying the Navy's front-line combat aircraft are many no-less-important support aircraft with specialized missions One such mission recognized as an essential requirement is Combat Search and Rescue and Special Warfare Support (HCS). Assigned entirely to the Naval Reserve, these older helicopters have the ability to deploy world-wide and embark aboard a wide variety of ships. To fill the void until the V-22 eventually fullfills the HCS mission, Congress has authorized and appropriated funding to purchase new combat SAR helicopters for the Naval Reserve. We have made a competitive selection and are requesting the first three HH-60 aircraft in FY-1988. This interim procurement of Naval Reserve aircraft possess a substantial improvement in HCS capabilities.

Additionally, the Naval Reserves operates a fleet of C-9 transports which facilitate the movement of support personnel to and from forward deployed sites.

The Marines and Navy, both, fly the CH/MH-53E, a heavy transport helicopter. Missions vary from amphibious assault and heavy lift operations to Vertical On-board Delivery (VOD) and Airborne Mine Countermeasures (AMCM). The two special AMCM squadrons operate the only such configured aircraft in the free world.

The Naval Air Training Command provides the bright future for tomorrow. Our flight and academic instructors have consistently produced Naval aviators who are second to none. The introduction of the T-45TS Goshawk will be a long-awaited step forward from the three decade old technology of the TA-4 and T-2 which it will replace.

THE NAVAL AVIATION PLAN

I envision many changes in the next few years--changes because the perceived threat has changed, technology has advanced, the anticipated wartime enviroment has changed, or opportunities have emerged to build new efficiencies into the system. We in Naval Aviation face these changes with enthusiasm and view change as opportunity.

One example of the continual search for fiscal efficiencies is the planned procurement of two new aircraft carriers to replace the USS MIDWAY and one FORRESTAL-class carrier. When the Navy studied the greatly increased cost efficiencies which will result from retained industrial manpower and learning curve, common equipment, setup and other nonrecurring costs, it became obvious that we must request the long-lead funding for two replacement CVNs in this budget.

Another change which we have been planning for several years will occur over the next three years. The commissioning of our fourteenth active airwing (CVW-10) takes place this year, and the second reserve airwing will be modernized by FY 1990. These two events will fullfill the required 14 active and two reserve airwings for 15 deployable CV/CVNs by FY 1990.

NEW PROCUREMENT

Naval aviation is requesting a limited amount of new acquisitions. FY 1988 is the first year of procurement for the T-45TS integrated jet training system, as mentioned previously. The EA-3B is quickly approaching the end of its extended service life and therefore has been designated for priority replacement. The importance of the intelligence collection performed by these aircraft was emphasized by Fleet commanders in the debrief of the Libyan operations. Funding for EX competition is introduced in FY 1988. The airframe, which we intended to compete, will replace the 1950 vintage EA-3 to provide electronic warfare reconnaissance, tactical command, control, communications, and intelligence. Since that strategy was approved, several factors have lead us to propose a change to the budget request which will integrate existing EP-3E avionics into a minimum of 16 fleet S-3As. Procurement of the A-6F and F-14D aircraft, substantially improved versions of existing aircraft, is also scheduled to begin in FY 1988.

AVERAGE AIRCRAFT AGE

The planned average procurement of 167 carrier aircraft per year is required to sustain the current average age of our carrier aircraft at 10.4 years. Unfortunately, we are not reducing the age of our fleet of aircraft and increased age is a detriment to readiness. Older aircraft are more expensive to maintain and, more importantly to the operational commander, they tend to be less capable and less dependable. At the end of Vietnam War, the average age of our aircraft was 8.3 years; today, the average age of all our aircraft has increased to 12.8 years. During the past five years, the aging trend has been checked but not reversed. Currently, two-thirds of our aircraft are over 10 years of age and 40 percent are over 15 years old.

The 238 total aircraft procurement program we have outlined in the FY 1988 and 241 in FY 1989 request will keep the average age of all combat aircraft at about the eleven-year mark, and we will be able to maintain the vitality of our sea based forces. We will require much heavier investments in future years as the age of land based support aircraft increases.

I am concerned about the overall aging trend and have asked my staff to take a fresh look at diminishing returns for each type of

Naval aircraft as it approaches the ten year service life mark. We have recently recognized certain economies gained by remanufacturing an older aircraft vice new production such as the A-6 to F conversion and the F-14 A to D conversion. Additionally, we need to better determine at what point it is no longer cost effective to continue modernization programs. This study will undoubtedly effect our long-term aircraft procurement strategy. We must stretch useful aircraft life to its maximum while making only those changes necessary to stay up with the threat, allowing us to fight and win.

AIRCRAFT MODERNIZATION

To maintain a winning formula we must reevaluate the continued advances of the potential enemy. The significantly faster and quieter Soviet submarines make it imperative that we continue to update our P-3C aircraft with the latest sensors, known as Update III and Update IV, and continue to buy the S-3A Weapon System Improvement Program to update its capability for the next decade. There are continuing challenges in keeping up with the changing complexities of the outer air battle. The E-2C is being modernized in a building block fashion to extend its usefulness into the twenty-first century. The premier fighter in the world, the F-14, is being upgraded with 20 to 25 percent more powerful and maintainable engines. Recent experience reinforces the necessity to modernize our tactical strike aircraft to accommodate stand-off precision guided munitions and anti-radiation weapons. We are modifying the F-14A and EA-6B to give them the capability to use the latter.

In a time of reduced new production, the aircraft modernization investments become our only insurance against a backslide reminiscent of the 1970's. We must continue to modernize our older aircraft in order to maintain safety and operational effectiveness.

WEAPONS DEVELOPMENT AND SUSTAINABILITY

Winning the fight ultimately means delivering the available ordnance on target. Traditionally, the CINCs' number one concern is the shortage of weapons required to carry out the national strategy. Although increased weapon procurement in recent years has all but eliminated the requirement to cross-deck weapons on deploying combatants, we still have not filled the resupply pipeline and prepositioned inventories of several of the newer, more sophisticated weapons like HARM, IIR MAVERICK, PHOENIX, SPARROW, and HARPOON. The bread and butter of the ASW community, sonobouys, are being procured at a rate far below the training and operational expenditure rate.

The FY 1988/89 WPN budget request reflects a long-range strike weapon plan. The Center for Naval Analysis (CNA) and the Navy Strike Warfare Center developed a weapon effectiveness model which has been empirically tested both on our weapons ranges and in all major fleet exercises. The model allows more intelligent decisions regarding inventory fills vis-a-vis strike effectiveness. We derived a strike weapons acquisition plan from the model which will allow us systematically to phase out some one dozen type/model air weapons by 1995. This necking down of weapon types is one step toward lowering the escalating costs of sophisticated weapons. My goal is to pare down the number of weapons under development to the absolute minimum to satisfy the future Navy requirements.

READINESS INDICATORS IN THE BUDGET PROCESS

Many decisions go into establishing a balanced and executable budget. We keep readiness in mind as we make each one of them. As with the programming process, there is not one single "readiness indicator" which tells us that the budget request will enable us to achieve a specific overall level of readiness. We must review specific data in all areas of the budget--each of which is one factor in the equation.

We rely on specific factors in a number of programs that give us a good indication of the level of readiness supported in the budget. Among these programs are the flying hour program, described earlier, and aircraft material readiness.

There are two major indicators of aircraft material readiness. The first is the mission capability (MC) rate. This is determined by an analysis of the percentage of operating aircraft (for example, those assigned to an aircraft carrier on deployment) which are capable of performing their designated mission. In the FY 1988/89 budget, we are requesting funds to enable us to achieve our goal and maintain a mission capable rate of 74 percent. This is a substantial improvement over the 59 percent rate which existed in 1981, and it does indicate that we are more ready to defend our country today than we were at that time.

The record boost to both readiness and sustainability experienced in the past two years is a direct result of the increased investments in aviation spares, aircraft depot rework and support equipment made in the early 1980's. The S-3 Viking is a prime example of what adequately funded depot level rework and spares can do. This key ASW platform rose from the bottom of the MC readiness records (less than 40% MC) when spares were underfunded to the highest readiness rate of all deployed CV fixed wing aircraft (greater than 80% MC) once adequate attention was given to spares support--a success story with convincing results.

The reductions mandated by an austere budget have required us to scrub spares, depot rework, and support equipment in the FY-88/89 request to the bare minimum while ensuring that we do not adversely affect readiness and sustainability. Since the readiness indicators typically lag investments by two to four years, the impact of underfunding is not readily visible. This year's request has been pared to the point that we do not expect further MC/FMC improvements and could experience slight declines; however, it represents our best efforts at a balanced approach within the limits of affordability.

The second indicator of aircraft material readiness which has a substantial near term impact is the percent of aircraft engine availability. We are currently budgeted at 100 percent in FY 1988/89. This means we estimate that 100 percent of the time that an aircraft requires a replacement engine during FY 1988, the engine will be available. A programmed management backlog is being maintained within the engine pipeline, but we believe we can manage at this level without any serious degradation to readiness.

The standard readiness indicator for the flying hour program is primary mission readiness (PMR). For each type of aircraft, a pilot needs to be trained to gain and maintain specific skills. Over a number of years, we have determined the number of hours per month that are necessary for trained pilots to maintain these skills. Our budget development process is designed to determine the minimum funding levels required to enable the number of crews we have to achieve flight hour requirements within financial constraints. The FY 1988 budget requests funds to enable us to achieve that level 87 percent of the time compared to a peacetime goal of 88 percent. We know that a reduction below this goal will result in either a loss of skill and mission capability, a reduction in safety, or both.

Obviously, airwings preparing for deployment and those deployed get the lion's share and those returning from deployment receive less. The average TACAIR crew receives only 25 hours per month, which is considered the absolute minimum for retention of critical combat flying skills. Aside from the very important need to have sufficient flying hours to maintain readiness and safety, there's also a critically important element which relates to the retention of aviators. Aviators like to fly; for most active aviators, 30 or 40 hours per month in a Navy tactical aircraft would probably provide enough encouragement to stay in the Navy despite deployments and regardless of other hardships. They don't get that today.

Underlying the foundation of aircraft material readiness is potentially the most significant problem--a shortage of people. As the Navy grows toward the 600-ship and 14 active carrier airwing goal, it stands to reason that we need more people. Yet, the Navy has not been authorized sufficient end strength to stay up with growth. In order to man the fleet, we have had to draw down our shore station manning. Consequently, the shore stations are very short of certain skilled personnel whose job it is to support the fleet.

I'm concerned that if we draw down any further, the shore stations will be unable to do their job, and we will see our readiness start a downward trend.

SUMMARY

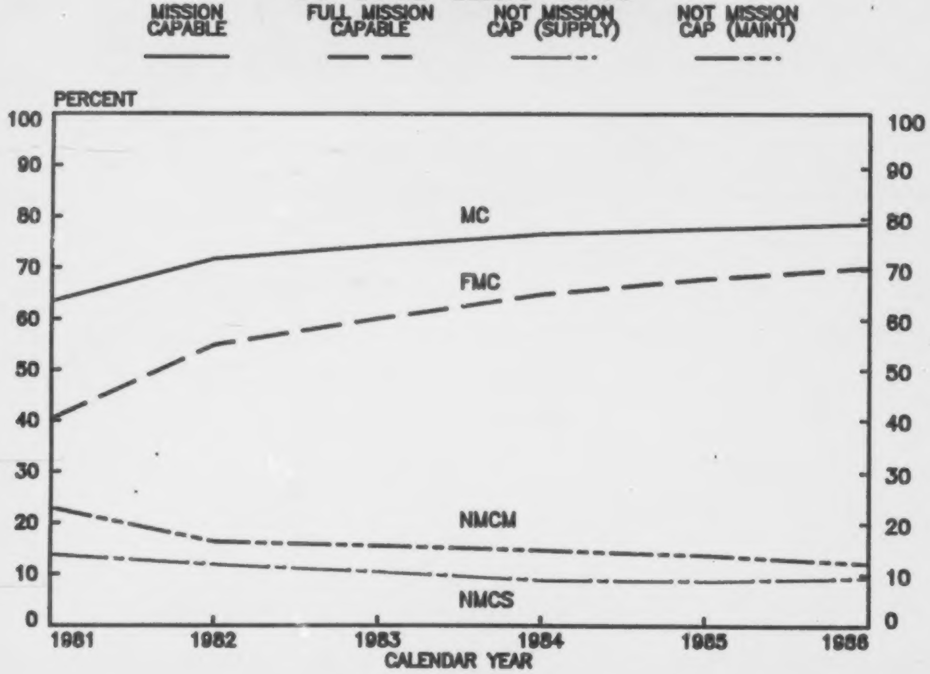
The mission of those of us in uniform is, "to be ready to fight and win at sea if ever called upon to do so." I know this Congress supports that goal, and in order to assure that we can execute our mission in support of the Maritime Strategy we must procure the right mix of aircraft and weapons and we must be able to ensure their material readiness and sustainability. If we continue to have the Congressional support which naval aviation has traditionally enjoyed, we are going to do the job you expect us to do and make every American proud.

Senator **Levin**. Thank you, Admiral. General.

STATEMENT OF LT. GEN. K.A. SMITH

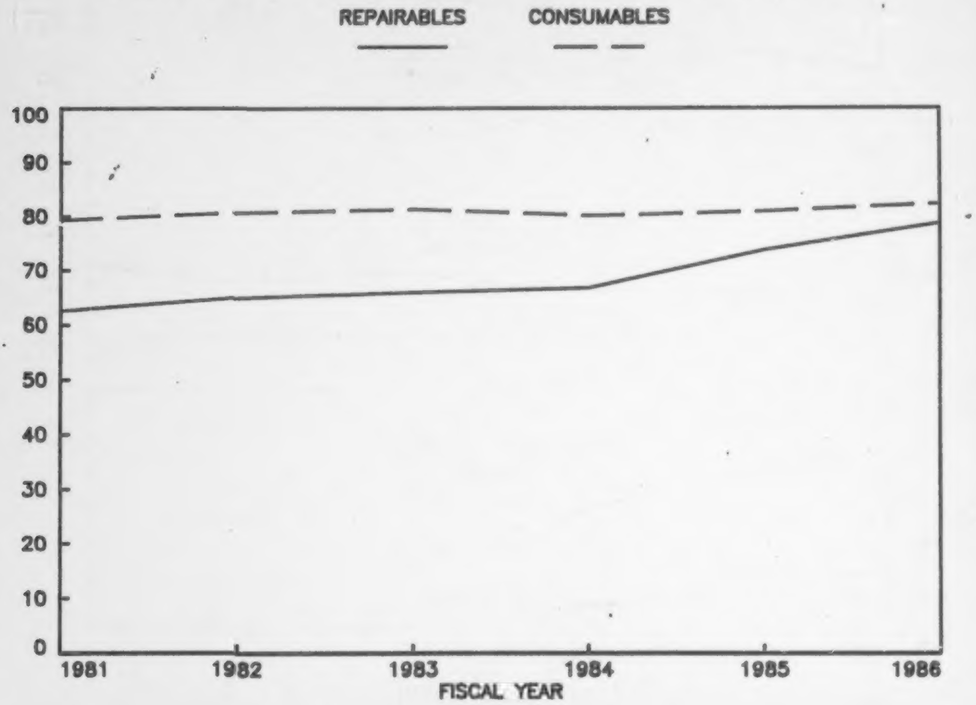
General **Smith**. Mr. Chairman, it is a pleasure to be here again this year. I would like to start by looking at where we have come, with the Congress' support, in terms of readiness of the cutting edge of the Corps.

ALL MARINE CORPS AIRCRAFT
CY 1981 THRU 1986



The first chart reflects mission capable and full mission capable airplanes starting from 1981 to 1986. It is an impressive chart, non-mission capable, and the non-mission capable supply lines at the bottom are equally attractive. This could not have been done without this committee's help. It is a large equation and, there are many things that go into it, but we are on a plateau where we should have been all along and we want to sustain that.

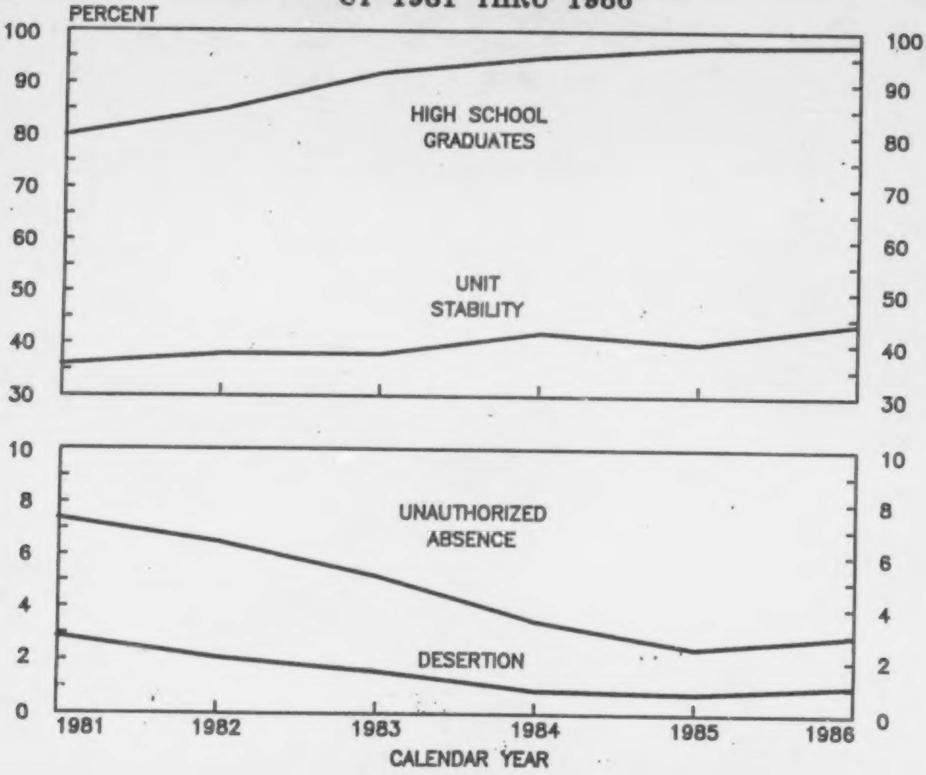
SPARE PARTS
(SUPPORT MATERIAL AVAILABILITY PERCENTAGE)



General Smith. The next chart reflects the spare parts status. The reparables are represented by a solid line. The consumables are the dotted line on top. This is another impressive chart. We must be very careful when this year's Authorization and Appropriation Acts are put together to attain the levels we need to achieve.

QUALITY AND STABILITY

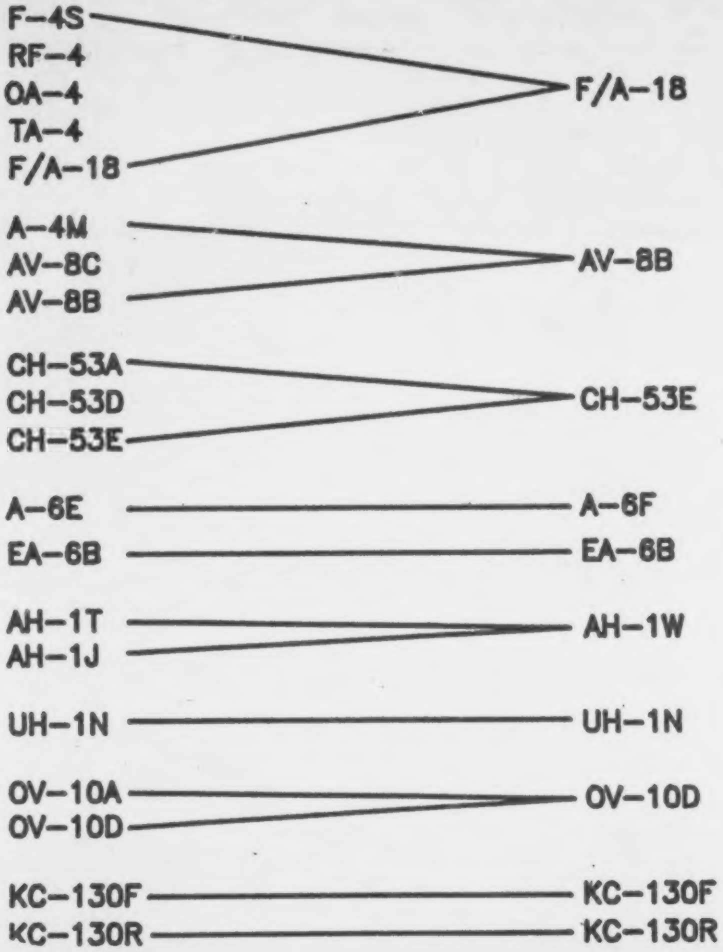
CY 1981 THRU 1986



The next chart reflects improvements in the people side of the House. High school graduates are depicted at the top line, and unit stability on the bottom. The definition of unit stability is the percentage of the manpower force that has been in a squadron for more than one year. Unit stability is still not where we would like to have it. We would like to be over 50, although the turbulence of moving airplanes and equipment around the battlefield would be like this anyway. The trend is in the right direction, however.

Quality and stability advantages are supported on the bottom by unauthorized absence and desertion rate declines. Again, the programs that are in place for retention purposes and the quality to start with are just right. Please preserve them.

MODERNIZATION EFFICIENCIES


F-4S
RF-4
OA-4
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CH-53D
CH-53E
CH-53E
A-6E
A-6F
EA-6B
EA-6B
AH-1T
AH-1J
AH-1W
UH-1N
UH-1N
OV-10A
OV-10D
OV-10D
KC-130F
KC-130F
KC-130R
KC-130R

The last chart reflects a broad goal that I brought to town from command of the 2nd Marine Aircraft Wing at Cherry Point. We operate absolutely too many type, model series of airplanes which is reflected by the column on the left. Our plan, if executed, and I am sure it will be supported by this group here, is to move in a 10-year period to the column on the right. We go from 20 different types to 10. All modern war machines are capable of doing the task.

There are three programs that I would just like to touch briefly on. First is the V-22 Osprey. The V-22 is a replacement for our aging CH-46 fleet. The V-22 brings with it the capability to do the mission which the 46 is not now capable of accomplishing in terms of weight, range, and speed. The second is the AV-8B—which I have lightheartedly referred to as a congressional program which now has DOD status. We are very proud of that program. We appreciate all the help that the Congress went to to give us this airframe. A couple of modifications to that airplane appear in this year's budget which enables it to fight at night and under the weather in slightly reduced visibility conditions. The AV-8B is a fine weapons system. Finally, command and control is the heart of our system and puts it all together. Tactical air operations module, TAOM, is the centerpiece and gives us the capability to work in real time with the forces that occupy the battlefield for a third of the weight and a third of the logistics support. It is a fine piece of equipment that we are bringing on this year. Again, I consider it an honor to be a party to the witness panel and look forward to responding to questions that you may have.

[The prepared statement of General Smith follows:]

PREPARED STATEMENT OF LT. GEN. K. A. SMITH, USMC

DC/S FOR AVIATION
FY-88/89 POSTURE STATEMENT

Mr. Chairman and Distinguished Members of the Committee:

Let me again express my appreciation for the opportunity to testify on Marine aviation. In this, my third appearance before your committee as the Deputy Chief of Staff for Aviation, it is a pleasure to outline the course we have charted for the future of Marine aviation, as well as report on the impressive performance of the Fleet Marine Force. We in Marine aviation fully recognize the significant, positive role Congress has historically played in these efforts.

My desire today is to briefly define the linkage between the Amphibious Strategy and our individual programs presented in the FY-88/FY-89 President's Budget. Accordingly, a brief overview of the considerations used to develop the Amphibious Strategy is provided as a foundation for program emphasis. Finally, my presentation would be incomplete without a report on the status of Marine aviation. Today, as never before, Marine aviation is prepared to support the Marine on the ground in the execution of the Amphibious Strategy.

DEVELOPMENT OF AMPHIBIOUS STRATEGY

Amphibious strategy, a descendant of national and maritime strategies, is responsive to the multitude of issues facing the United States today. Dynamic and dramatic changes in the world's character since World War II have sponsored an increasingly complex range of challenges; not the least of which has been the rapid ascendency to power and worldwide influence of the Soviet Union. The defensive rationale, historically used to justify the Soviet military buildup, is losing credibility as the offensive nature of Soviet forces becomes increasingly clear.

National Strategy

The Soviet change in posture has mandated a national strategy based on three interrelated precepts: Deterrence, Forward Deployment, and Alliance Maintenance. Deterrence through strength offers freedom from war or threat of war. Failing deterrence, the National Strategy provides options for this country to intercede with a minimum level of response at a desired time and place. The forward deployment of American forces, required by our geography, protects vital interest areas and strategic sea lines of communications. The maintenance of Western alliances is bolstered by our forward-deployed presence which also provides visible evidence of the United States' commitment to the Western alliance. Our National Strategy provides the framework for the genesis of the naval contribution: The Maritime Strategy.

The Maritime Strategy

Maritime strategy acknowledges the reliance of the United States on the vast waterways of the world. These expansive natural barriers, while offering some measure of defense, often impede the implementation of national strategy and dictate a powerful naval force to ensure freedom of the seas for the United States and her allies. The Maritime Strategy codifies the objectives of our National Strategy for American naval forces.

Maritime strategy reinforces deterrence by offering optional levels of response in an effort to limit violence. Should deterrence fail, the Maritime Strategy dictates a phased warfighting capability to destroy enemy maritime forces, protect sea lines of communication, support allied land campaigns, and secure leverage for early war termination. With a clear appreciation for the world's character today, a cogent amphibious strategy has been adopted which enables timely response, provides flexible options, and supports the integrity of the Western alliance.

The Amphibious Strategy

Derived from our National and Maritime strategies, the Amphibious Strategy is responsive to the multitude of challenges which face us today. The Amphibious Strategy fully supports national and maritime strategies by complementing diplomatic efforts and providing a national display of resolve. It allows the National Command Authority to select options with regard to intensity, location, and scope, while supporting worldwide alliances with incremental degrees of military assistance. Should peaceful alternatives fail to resolve a crisis, naval forces provide early and rapid commitment to combat. With amphibious assaults, naval forces can seize and defend strategic chokepoints as well as other national objectives. Our Amphibious Strategy, utilizing Marine forces embarked aboard naval vessels, represents the ultimate in strategic mobility, responsiveness, and flexibility.

In developing this national amphibious capability, several fundamental principles have been embraced. Strategic and tactical mobility is preserved by lightly equipped Marine forces which are manpower intensive in comparison with other conventional forces. Responsiveness is maintained by high levels of uniform readiness and innovative deployment techniques which enhance our combat posture. A flexible, expeditionary basing capability is retained acknowledging the likelihood of austere basing probabilities. The Amphibious Strategy provides the framework for developing structure, doctrine, and equipment for the amphibious force.

ORGANIZATION OF THE FORCE

The Marine Air-Ground Task Force

Marine Air-Ground Task Forces are warfighting, combat-arms organizations comprised of elements drawn and task organized from four active/reserve divisions, wings, and force service support groups. The Marine Air-Ground Task Force is, therefore, a generic warfighting organization with varying levels of size and capabilities, each tailored to the nature of the mission.

All Marine Air-Ground Task Forces contain four essential components united under a single commander. The command element provides a headquarters for the command and coordination of the subordinate components. A Ground Combat Element, with infantry forces as the nucleus, is augmented with other supporting combat arms. An Aviation Combat Element provides aviation support for the entire Marine Air-Ground Task Force. The Combat Service Support Element completes the Marine Air-Ground Task Force and supplies a wide range of logistical needs. A Marine Air-Ground Task Force can be deployed as an independent unit, part of a larger Marine Air-Ground Task Force, or incrementally by either airlift or sealift.

From the smallest Marine Amphibious Unit to the largest Marine Amphibious Force, Marine Air-Ground Task Forces are potent combat forces for a variety of contingencies across the spectrum of conflict. Marine Air-Ground Task Forces can be moved to a strategic region while disguising the precise objective and can sustain their presence in the region without violating a nation's sovereignty. Marine Air-Ground Task Forces may also be deployed independently of established ports or airfields and relieve diplomatic requirements for facilities, operational rights, or supplies. By exercising combat power consistent with the situation, Marine Air-Ground Task Forces can rapidly build in size and expand in capability or area of influence. Should circumstances improve, Marine Air-Ground Task Forces may be quickly withdrawn without complications.

Role of Marine Aviation

Marine Aviation Combat Element support of the Marine Air-Ground Task Force is expressed in six functions:

- Anti-air warfare enables the Marine Air-Ground Task Force to achieve and maintain control of the airspace over the battlefield.

- Offensive air support provides the Marine Air-Ground Task Force with responsive firepower at the required time and place.

- Assault support allows the movement of troops, equipment, and supplies across the battlefield by aviation platforms.

- Air reconnaissance serves the Marine Air-Ground Task Force with tactical intelligence capability through visual, photographic, and electronic means.

- Electronic warfare identifies, exploits, and reduces or prevents adversary use of the electromagnetic spectrum.

- Command and control is essential to achieving full integration and effective/efficient utilization of the Marine Air-Ground Task Force's aviation assets.

These six functions will provide the framework for programmatic discussions later in the text.

Contributions of Marine Aviation Support

An alternative view of Marine Aviation Combat Element support may be further considered within the context of firepower, mobility, and aviation-unique support.

Firepower. Since heavy, ground-based firepower is often reduced to facilitate transportability, the Aviation Combat Element supplies the offset. The range and speed of aviation firepower extend the reach of the Marine Air-Ground Task Force and allow responsive engagements over great distances. The vertical dimension characteristic of aviation overcomes battlefield terrain limitations and enhances freedom of movement. Aviation firepower also challenges enemy aviation and reduces Marine Air-Ground Task Force vulnerability.

Mobility. Sea- and land-based aviation provides tactical mobility for the Marine Air-Ground Task Force to exploit tactical circumstances. Aviation forces assist in the rapid buildup of combat power ashore and allow sustained and responsive logistical support for onshore forces even at great ranges. Every aspect of Aviation Combat Element support is uniquely designed, organized, and equipped to transition ashore and operate from expeditionary bases without external support. Unencumbered by ground trafficability considerations, the Aviation Combat Element enhances the battlefield mobility of the Marine Air-Ground Task Force by allowing the ground force to rapidly mass at the precise time and place required.

Aviation-Unique Support. Unique characteristics of aviation offer capabilities to the Marine Air-Ground Task Force which would otherwise be denied. Aerial reconnaissance uses a variety of onboard airborne systems to extend the "eyes" of the Marine Air-Ground Task Force far beyond the range of ground systems. Essential airborne command and control is achieved in circumstances which would defy alternatives. Early identification and targeting of supporting arms against enemy forces are accomplished beyond the visual range of ground forces. Electronic warfare capabilities extend and protect the effectiveness of the electromagnetic spectrum for the Marine Air-Ground Task Force.

FORCE IN TRANSITION

Marine aviation is a force in transition to effectively meet the challenges of the future. Although equipment modernization is essential to keeping pace with emerging threats, an overall capabilities review is equally important to ensure the Aviation Combat Element remains effective. Despite the opportunities offered by emerging technologies, we can ill afford to be technology bound at the expense of a reliable and supportable amphibious force.

Several objectives have become explicit in our ongoing equipment modernization program. The foremost objective is to promote combat efficiency. Every aircraft must be tactical and contribute toward the overall Marine Air-Ground Task Force effort. Aircraft should not be relegated as expendable by their lack of warfighting potential.

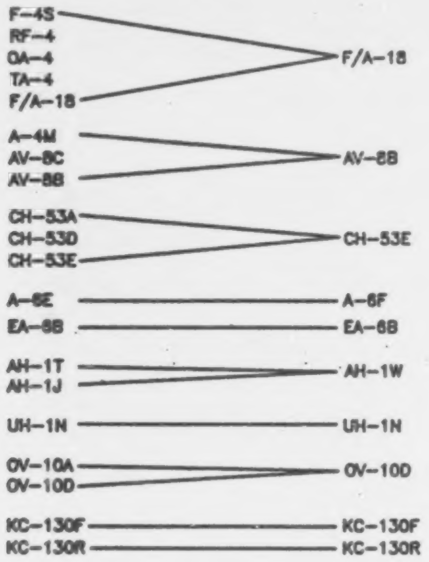
Aviation's adverse weather and night capabilities across the board are also receiving the highest priority. Aviation limitations during these conditions must be overcome. Technology is now available which allows the Marine Corps to overcome these obstacles to complete all-around Marine Air-Ground Task Force support.

Marine aviation's dependency on strategic and tactical airlift and sealift is being reduced as part of an overall Marine Corps lift reduction strategy. Improving aircraft self-deployability is the first step to reducing lift requirements, and we are rapidly approaching a point in time where aircraft self-deployability will be realized. Even though initiatives to reduce the logistical lift footprint continue, care must be taken to ensure that any reduction in lift requirements is accomplished without sacrificing Aviation Combat Element support.

Advancing technologies are being adopted, but not without careful protection of reliability and maintainability safeguards. These factors must be engineered in the early stages of equipment design. Support functions and facilities are now being developed and procured in concert with their primary weapons systems. In the austere, expeditionary operational environment, a pacing factor becomes reliability and maintainability.

Finally, the number of different aircraft in the Marine Corps inventory is being reduced. Figure A reflects the progress as projected onhand aircraft types will be decreased by one-half.

MODERNIZATION EFFICIENCIES


F-4S
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OA-4
TA-4
F/A-18
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A-4M
AV-8C
AV-8B
AV-8B
CH-53A
CH-53D
CH-53E
CH-53E
A-6E
A-6F
EA-6B
EA-6B
AH-1T
AH-1J
AH-1W
UH-1N
UH-1N
OV-10A
OV-10D
OV-10D
KC-130F
KC-130F
KC-130R
KC-130R

FIGURE A. TYPE AIRCRAFT REDUCTIONS

The potential exists for further reductions which will enhance our supportability objectives. The apparent benefits of common aircraft spares, technical expertise, and support equipment will be the reduction of aircrew and maintenance personnel training requirements. Marine aviation is committed to overcoming the single-type aircraft/single-mission problem.

MARINE AVIATION FUNCTIONS

Returning to the six functions of Marine aviation, let me emphasize their importance in developing missions, equipment, and squadrons, as well as a recognizable framework for describing existing and planned capabilities. When aircraft characteristics allow for overlapping capabilities in other than their primary roles, they are identified as secondary tasks.

Anti-Air Warfare

Airspace control over the battlefield, anti-air warfare, is accomplished with a variety of air-to-air and ground-to-air systems. Our air defense philosophy is to engage the enemy well away from the Marine Air-Ground Task Force and continue repeated engagements with a variety of different weapons as he closes on friendly positions. Modern fighter aircraft can intercept adversaries at extended ranges and are ideal for quick response to a variety of airborne threats. Ground-to-air systems provide more specific area coverage within the range and altitude limitations of each system. This enables a "belted" approach to anti-air warfare using the layered capabilities of a balanced air-to-air and ground-to-air force mix.

Fighter/Attack Squadrons. Twelve active squadrons support the Marine Air-Ground Task Force with a primary air-to-air capability and a complementary air-to-ground capability. Six tactical F/A-18 squadrons have now completed transition, with the seventh currently in training. In FY-88, the Marine Corps will also standup an F/A-18 training squadron at MCAS El Toro, California; and in FY-89, the first F/A-18's will be introduced to our reserve forces.

The versatility of the F/A-18 is the driving factor for reorganizing and consolidating several functions into one organization. The current 12-plane squadron will increase to 16 aircraft. Eight of these aircraft will be the single-seat F/A-18C's, while the other eight will be F/A-18D's, a two-seat version. Both F/A-18C and F/A-18D will have a night, under-the-weather attack capability. The reconnaissance role currently performed by the RF-4B will be absorbed by the F/A-18D. This is accomplished by substituting a reconnaissance pallet capable of multisensor, stand-off, all-weather reconnaissance in place of the F/A-18D gun pallet. The addition of the RF-4 Side-Looking Airborne Radar pod to the F/A-18D completes the reconnaissance package.

Reorganization, made possible by the F/A-18D and the tactical reconnaissance pallet, reduces the different types of aircraft, training support, and overall personnel requirements. Development funding for the tactical reconnaissance pallet and procurement funding for 30 F/A-18D's are requested in FY-88 and FY-89.

Light Anti-Aircraft Missile (LAAM) Battalion. Our LAAM Battalions use the HAWK missile system, one of the world's most effective medium-range, low-to-medium altitude, ground-to-air systems. Since its introduction in the 1960's, the HAWK missile system has been extensively upgraded for an intense electronic warfare environment. All equipment at the battery level can be transported by cargo aircraft, helicopter, truck, rail, or cargo ships enhancing its deployability as part of the Marine Air-Ground Task Force.

Emphasis in air defense has prompted a recent expansion in HAWK capability from two firing sections per battery to three. This arrangement enables continuous coverage while simultaneously displacing other batteries forward as the tactical situation requires. The LAAM expansion has dictated an increase in our HAWK missile inventory objective, and procurement of HAWK missiles is requested to provide adequate missile inventory levels.

Low Altitude Air Defense (LAAD). The LAAD Battalions are equipped with the Stinger missile system for low altitude, close in, mobile air defense. Stinger is a second generation, man-portable, infrared homing, guided missile system designed to counter high-speed, low level, ground attack aircraft and helicopters. Target acquisition is essentially accomplished visually, and identification is provided by an integrated identification friend or foe (IFF) subsystem. A serious limitation affecting the employment of Stinger exists during darkness, and we believe development funding requested in FY-88/89 for a Stinger night system offers the solution.

Stinger is distributed throughout the battlefield to fill gaps and provide air defense-in-depth requirements. Stinger is normally assigned to each size Marine Air-Ground Task Force and often represents the only air defense capability available during the initial stages of the amphibious assault.

Offensive Air Support

Offensive air support describes air-to-ground strike operations against enemy personnel, equipment, and installations. This function is primarily fulfilled by light and medium attack squadrons operating the A-4M/AV-8 and A-6E aircraft respectively. A total of 13 active operational attack squadrons are subdivided as 8 light attack squadrons and 5 medium all-weather attack squadrons. The combination of their unique characteristics provide an overall balanced capability.

Light Attack Force. The existing light attack force is transitioning to the AV-8B VSTOL aircraft. AV-8B modernization allows significantly greater response since this aircraft may be based on existing roads and fields located close to ground forces. The availability of the AV-8B is not dependent on fixed airfields, and its vulnerability is reduced through dispersion in the field.

AV-8B introduction is proceeding smoothly, and the fourth squadron transitions this year to conclude the initial East Coast AV-8B transition. The AV-8B night attack capability will arrive in FY-89 to expand night and under-the-weather operations. The first 3 of 27 TAV-8B's, the two-seat trainer, will arrive this summer. In 1987, two six-plane AV-8B detachments will be assigned to forward-deployed Marine Amphibious Units aboard amphibious shipping for the first time.

Medium Attack Force. Equipped with the venerable A-6E, the medium attack force fills the all-weather, deep strike role and includes options for special weapons employment. Five Marine Corps squadrons complement the light attack capability by providing all-weather, around-the-clock close air support.

A combination of new A-6F's and A-6E's converted to A-6F's satisfies DON's all-weather requirements until the Advanced Tactical Aircraft (ATA) is fielded. The first year of A-6F procurement in the FY-88/89 request concludes a five-year development program. The Navy will receive the A-6F in 1991 and the Marine Corps in 1993.

The A-6F upgrade is intended to ensure today's capability remains viable. This is accomplished by enhancing survivability with improved avionics, a high resolution radar, night attack system, and state-of-the-art electronic counter-measure equipment. Reliability is improved by installing digital avionics, built-in test features, and maintenance data recording. The A-6F will provide the Marine Corps a more capable, increasingly survivable, all-weather attack force to the year 2000.

Assault Support

Assault support forces support the Marine Air-Ground Task Force principally through vertical lift and other complementary support roles. Assault support forces are defined as medium, heavy, and unique support forces. Medium lift forces principally conduct initial combat assaults with embarked ground assault troops. Heavy lift forces are reserved for moving heavy equipment and supplies in waves subsequent to the initial assault. The balance maintained between medium and heavy lift forces is driven by the quantity of personnel and equipment required to be positioned ashore within 90 minutes from the beginning of the assault. The rapid buildup of combat power ashore is key to successful amphibious assaults.

Medium Lift Force. An active, medium lift force of 15 CH-46E helicopter squadrons exists today. The early 1960's technology used in the CH-46E no longer meets today's survivability or lift requirements, and the medium lift force is rapidly facing block obsolescence. A two-pronged approach is underway to resolve near and mid-term deficiencies in our medium assault capability. They are the CH-46E Block Upgrade and the MV-22 Osprey programs.

CH-46E Block Upgrade consolidates three separate and previously funded initiatives. First, the extended range fuel system increases the limited endurance of the CH-46E from 1.5 to

3 hours. This is a repeated fleet concern. Second, a doppler navigation system is included for a night, hover-over-water capability. The final initiative, an emergency floatation system, will enable the CH-46E to remain afloat in water for 3 hours and provides a greater margin of safety for embarked troops. CH-46E Block Upgrade funding is requested in FY-88/89 to meet an initial operating capability of 1989. The CH-46E will remain in the Marine Corps inventory until MV-22 conversion is completed in 1999.

MV-22, the mid-term initiative, provides the most dramatic capability improvement for aviation in this decade. The unique MV-22 tilt-rotor concept offers greater flexibility for the Marine Air-Ground Task Force with profound strategic/tactical implications. MV-22 clearly enhances Marine Air-Ground Task Force support by offering improved speed, range, endurance, and lift efficiency vastly superior to any known alternative. Its survivability features include crashworthy fuel and seating systems, electronic countermeasures protection, a Forward Looking Infrared and a self-contained navigation systems. Reliability and maintainability experiences gained from the F/A-18 and AV-8B technology are being fully incorporated into the MV-22 design. MV-22 introduction in 1991 remains imperative to avoid deterioration of the medium assault support lift so critical to amphibious operations. MV-22 remains the Marine Corps' top priority.

Heavy Lift. The CH-53 family of helicopters provides heavy vertical lift for the Marine Air-Ground Task Force. Lift requirements imposed by the increasing amount of heavy equipment have overtaxed our present heavy lift capacity. The result is of great concern, and the only existing solution is to procure more

CH-53E's. To satisfy our total heavy lift requirement, nine active, tactical CH-53E squadrons are required.

The CH-53E is capable of lifting loads two and a half times heavier than that of its predecessors in the extremely high and hot regions of the world. The CH-53E is the only helicopter capable of lifting the light armored vehicle, and M-198 howitzer. Three CH-53E squadrons are in operation today, and a fourth transitions in FY-88. The ongoing CH-53E multiyear procurement program is in its fourth year and is estimated to have saved over $92M for the American taxpayer. The FY-88/89 Budget request contains a proposal for 14 CH/MH-53E helicopters.

Attack Helicopter Force. Attack helicopters fulfill a variety of roles which complement helicopter assault and subsequent ground operations ashore. Today's attack helicopter force is a composite of three different aircraft models, each with peculiar training and maintenance support. Persistent requests from the Fleet Marine Force to improve the capability of the AH-1 and balance available attack helicopter assets in the active and reserve forces have been the catalyst for reorganization.

Reorganization consolidates active, utility, and attack helicopters in a single squadron consisting of 12 AH-1W's and 12 UH-1N's. A uniform six squadrons will then support the six Marine Amphibious Brigades. Past and current AH-1W procurement, in conjunction with the AH-1T to AH-1W retrofit program, provides sufficient total numbers of aircraft to standardize the active operational and training force with AH-1W's. The remaining AH-1J's in the active force will be freed to fill our reserve attack helicopter force deficit. Procurement requests for 34 new AH-1W's and the AH-1 Block Upgrade are included in the FY-88/89

Budget. It is essential that these simultaneous procurement and modification programs remain aligned if Marine aviation is to capitalize on the business agreement which makes this initiative affordable.

A companion development program, the Night Targeting System, will enable the full range of AH-1W capabilities to be employed at night. The AH-1W is the only remaining attack aircraft without a true night attack system. The night targeting system will round out our stated objectives of improving night warfighting potential across the force.

Utility Helicopter Force. The UH-1N has been a dependable utility helicopter for many years. The previously discussed reorganization ensures essential command and control functions of the UH-1N are available in equal quantities to each Marine Air-Ground Task Force. Command and control is accomplished by inserting a multi-radio communication package which is invaluable to maintaining command and communication links, particularly when ground forces are rapidly displacing. Proposed night operations and electronic countermeasure enhancements are included in the Helicopter Development request for FY-88/89 to expand the UH-1N's usefulness and survivability.

Aerial Observation Force. Provided by the OV-10 aircraft series, aerial observation includes tactical reconnaissance, observation, and targeting capabilities for both ground and aerial operations. These missions are executed by specially trained reconnaissance/supporting arms experts who participate as an integral part of the OV-10 crew. The aerial observation force is comprised of two active squadrons each with 15 aircraft and a detachment of 6 OV-10's located in the western Pacific.

The OV-10D, introduced in 1981, is an improvement over the OV-10A and includes a FLIR, a laser designator, and improved range and endurance. However, modernization of the OV-10 remains incomplete, and the force continues to age. A two-fold resolution is proposed in the OV-10A to OV-10D Conversion and Service Life Extension Programs (SLEPs). The OV-10A to OV-10D Conversion completes active force standardization and features targeting capabilities compatible with modern weaponry and night operations. The SLEP program extends the life of existing assets. Both SLEP and conversion programs are requested in the FY-88/89 Budget and allow substantial benefits in the areas of training, maintenance, and reliability.

Air Reconnaissance

During Marine Air-Ground Task Force operations, it is essential to utilize the Aviation Combat Element to gather information vital to the successful conduct of operations. Aviation's contribution to tactical reconnaissance principally resides with a single tactical reconnaissance squadron of 21 RF-4B's. The aging RF-4B uses photographic, electronic, and visual means to gather information. While aerial reconnaissance is accomplished today by the RF-4B, it is soon to be transferred to the F/A-18D as a part of the F/A-18 reorganization initiative already presented. The importance of the tactical reconnaissance development program toward this end cannot be overstated. Finally, visual means are native to all aircraft, but are specifically assigned to the OV-10A/D and their specially trained aircrews.

Marine aviation is improving its information gathering capability with the development of a medium range, remotely piloted vehicle (RPV). Remotely piloted vehicles collect valuable information in high threat areas without risking costly manned aircraft. This turbo-jet powered, subsonic RPV also specializes in day and night imagery and is capable of data linking information with compatible receiving stations for real-time examination. Regardless of whether launched from an aircraft, a ship, or a truck, this RPV will be fully compatible with other joint systems, although it retains an autonomous operational capability.

Electronic Warfare

The capable EA-6B defines, exploits, and reduces adversary influence over the electromagnetic spectrum. The Marine Corps' single active squadron of 15 EA-6B's is capable of simultaneously supporting 2 detachments and a base squadron. Today's sophisticated electronic warfare environment severely taxes our existing force capability, and the continued procurement of the EA-6B, as requested in FY-88 and FY-89, remains the only permanent solution to this shortfall. Additional complementary measures are requested under Common Electronic Countermeasure procurement as self-contained, warning, and jamming devices for each individual aircraft.

Finally, Marine aviation proposes additional protection for its tactical aircraft with procurement of the Tactical Air-Launched Decoy. This decoy confuses, saturates, depletes opposing air defense systems and encourages threat emitter operations for anti-radiation missile homing. The Tactical Air-Launched Decoy also dispenses chaff forward of friendly attacking aircraft. Sustained procurement of Tactical Air-Launched Decoy is requested to reach inventory objectives and preserve other, more costly assets.

Marine Air Command and Control

The Marine Air Command and Control System is the total system which coordinates all functions of Marine aviation. Generally, Marine Air Command and Control's responsibilities include advising and assisting the Tactical Air Commander in gathering and correlating information, as well as preparing and promulgating plans and orders. These responsibilities extend to the integration of all other functions of Marine aviation to fulfill the requirement for continuous aviation support. The Marine Air Command and Control System modernization is well underway and provides replacement systems for all facets of command and control. A brief description of these agencies and the improvements underway is offered in amplification.

Tactical Air Command Center. At the center of the Marine Air Command and Control is the Tactical Air Command Center which serves as the Tactical Air Commander's command post. In this capacity, it assists in supervising all subordinate air control and air defense agencies. The Tactical Air Command Center is functionally divided into two sections: Plans and Operations. The plans section oversees planning and control of the Marine Air-Ground Task Force air effort; this is presently accomplished manually. The operations section is manned by a staff of air control personnel who coordinate real-time control of all Aviation Combat Element operations. Today, the operations section is partially automated.

The Advanced Tactical Air Command Center is under development to replace 20-year-old equipment and features a fully automated plans and operations section. The Advanced Tactical Air Command Center also decreases lift and logistical requirements by reducing both the required time for assembly and the number of shelters from 10 to 4. Advanced Tactical Air Command Center procurement envisions fully supporting two independent Marine Amphibious Brigades simultaneously and is interoperable with both allied and joint systems.

Tactical Air Operations Center. The functional air defense and anti-air warfare control agency, Tactical Air Operations Center, is a decision-making agency and assists in the timely commitment of air defense assets, including engagement by HAWK and Stinger missiles. Tactical Air Operations Center detects and identifies aircraft in its sector and disseminates information to air defense forces. Additionally, Tactical Air Operations Center can provide navigational assistance to friendly aircraft and control hostile aircraft and missile intercepts.

A replacement system, Tactical Air Operations Module is in its third year of procurement and is designed to replace equipment no longer adequate. The Tactical Air Operations Module is a self-contained, modular system and allows an incremental buildup to full capacity. Up to four modules may be interconnected to support the full Tactical Air Operations Center normally assigned to a Marine Amphibious Brigade. Modules which are not required for smaller or less complex operations are not deployed, and the required level of support is not degraded. Tactical Air Operations Module reduces the lift footprint by 25 percent over current Tactical Air Operations Module requirements, and reduces overall manpower requirements. Tactical Air Operations Module reliability is six times greater than the current system and requires seven times less maintenance. A joint program with the Air Force, Tactical Air Operations Module is interoperable with our allies and other services.

Direct Air Support Center. The Direct Air Support Center provides procedural control for close air support and assault support operations within the amphibious objective area. As the focal point for communications between the Tactical Air Commander and the Ground Combat Element Commander, the Direct Air Support Center enables full integration of aviation and other supporting arms with the ground scheme of manuever. With the Direct Air Support Center, the Marine Air-Ground Task Force commander can rapidly reapportion airborne aviation assets, should the combat situation dictate.

As a supportability initiative, the Improved Direct Air Support Center was conceived as a low cost, interim replacement for the DASC currently in the field. The Improved Direct Air Support Center consists of off-the-shelf, government-furnished equipment and includes tactical shelters, intercom systems, operator work stations, and situation display boards. This low risk effort began with a minimum of development funding, and in August of 1987, IDASC will be introduced to the fleet. Procurement funding in the FY-88/89 request secures the final five shelters.

The range of ACE support is succinctly described in these six functions and is the foundation for many of the efforts which have been presented to the Congress annually. Your continued support of Marine aviation programs has in no small way contributed to the attainment of our goals for improved Marine Air-Ground Task Force support. The seeds of past congressional support bear fruit in our force today.

ASSESSMENT OF TODAY'S CAPABILITIES

As Deputy Chief of Staff for Aviation, it has been a distinct pleasure to observe the achievements of Marine aviation in the field, and my frequent visits confirm what statistics portray. This past year has been record breaking in all areas and recognizes the high level of readiness the American people have come to expect of their Marine Corps.

Training to Win

Continuous training is vital to achieving the uniform, high level of readiness demanded of Marine aircrews and personnel. The key ingredients to sustaining readiness are the flying hour program, timely procurement of flight simulators, and training support programs. All of these must remain abreast of force modernization efforts.

Flying Hour Program. Improvements made in the flying hour program have two distinct parts. First, overall funding support is reaching the required level and is properly balanced between communities to meet their respective training needs. Second, fleet execution reinforces the need and demonstrates the Marine Corps' ability to execute increased flying hours as funding levels permit. Last year, Marine tactical air forces established a new record for flight hour execution by flying more hours than in any previous year since Vietnam. With a DON aircrew goal of 25 hours per month, the average flight time per pilot has steadily increased from nearly 17 hours per month in FY-85 to a proposed 22 hours per month in FY-88. Training requirements are continuously refined to promote combat efficiency and ensure tactical aircrews receive the full benefit of flight hours.

Flight Simulators. State-of-the-art flight simulators are indispensable with modern technology aircraft. Flight simulator procurement is now an integral part of aircraft modernization.

In the past 4 years, simulator use has doubled, and simulators are now planned for every aircraft being introduced. Flight simulators enable the full exploitation of precious, actual flight experience, and we are mindful they are not a substitute.

Training Support. The Training and Readiness Manual is a single source document for training aircrews. A separate and detailed training syllabus exists for every aircraft the Marine Corps operates. Efforts currently underway standardize the format and currency procedures for all aircraft communities and will incorporate the Marine Air Command and Control communities in the Training and Readiness Manual system. Our intent is to ensure imaginative and innovative training procedures used by one community are exploited throughout Marine aviation.

An innovative approach being implemented to offset an overall shortage in adversary aircraft support is our reserve adversary squadron, VMAT-401. This squadron will be established at Marine Corps Air Station, Yuma, Arizona in the fourth quarter of FY-87. A total of 13 F-21 KFIR aircraft will be leased from Israel with full contract maintenance support to provide interim adversary aircraft for air-to-air combat training. Manned predominately by reserve aircrews, VMAT-401 enables the Marine Corps to capture the experience of highly qualified reserve officers in a relatively low cost training support effort and contributes substantially to upgrading the combat readiness of Marine aircrews.

Another training support initiative deserving your attention is Marine Aviation Weapons and Tactics Squadron One (MAWTS-1). Established in the late 1970's, MAWTS-1 provides graduate level training for aircrews already experienced in fleet aircraft. The focus of training is to school experienced aircrews as Weapons and Tactics Instructors (WTI's) in advanced tactics and warfighting concepts. Representatives from all Marine Corps aircraft communities as well as other services participate in a 7-week course conducted biannually. After completing the MAWTS-1 course, the WTI returns to his parent command to pass on his knowledge. Marine Aviation Weapons and Tactic Squadron One sponsors innovative equipment applications and techniques for successful Aviation Combat Element operations.

Conservation of Assets

Calendar year 1986 was a year of historical importance for Marine aviation as we achieved the lowest Class "A" mishap rate in our 75-year history. At a rate of 4.4 mishaps per 100,000 flying hours, our mishap rate was less than one-half that experienced in calendar year 1981. Figure B depicts the decline in mishaps over the past 6 years.

PRESERVATION OF ASSETS

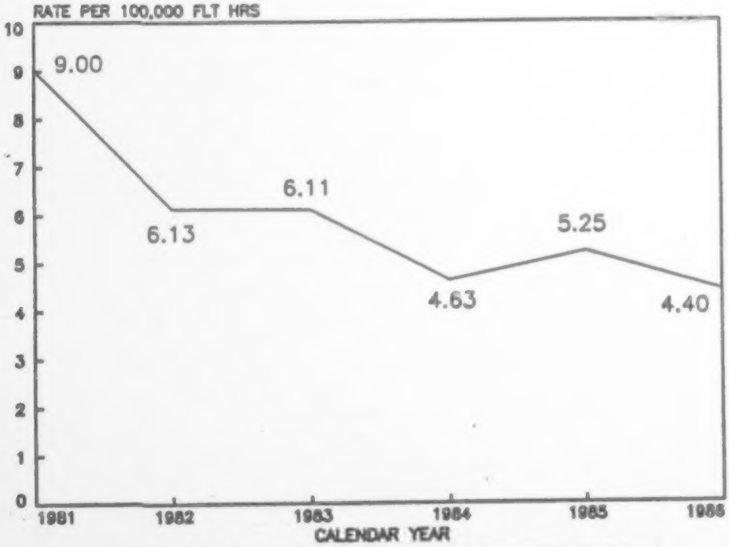


FIGURE B. USMC CLASS "A" MISHAP RATE

However, safety is a continuous process, and command accountability accompanies the enormous trust placed with commanders today. Resource preservation is essential to the realization of the Aviation Combat Element's wartime potential as the air component of today's premier force in readiness.

Maintaining the Combat Edge

Maintaining today's ready capability demands focused attention to aircraft readiness. Marine aviation enjoys a higher state of equipment readiness than ever before. Figure C displays improvements in equipment readiness over the last 6 years.

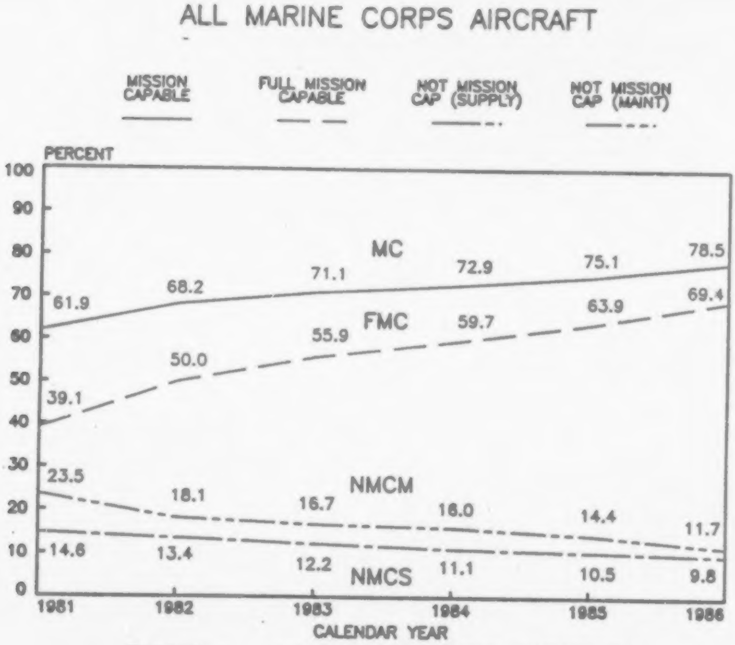


FIGURE C. MAINTAINING TODAY'S CAPABILITY

Since 1981, mission capable aircraft have risen by 16.6 percent, while fully mission capable aircraft have grown by 30.3 percent. Two important factors are the availability of spares and improved aircraft design.

Aviation Consolidated Allowance List (AVCAL) percentages reflect a spares support range of 90 percent of requirement with an achieved depth of over 85 percent of the requirement; net supply effectiveness now is 89 percent. The result is an impressive "not mission capable for supply" (NMCS) statistic of 9.8 percent. The temptation to revert to previous practices which mortgaged readiness by underfunding spares support must be avoided in the future.

Modernization has assisted aircraft readiness as we continue to insist on greater reliability of replacement systems. Our newest aircraft serve as superb examples. F/A-18 overall mission capable readiness for calendar year 1986 was 84.2 percent, while full mission capability was 81.6 percent. The AV-8B's average mission capable readiness was 75.7 percent, and full mission capability reached 67.8 percent. Built-in reliability and maintainability reap immeasurable benefits to overall force readiness which cannot be ignored in the development of future systems.

SUMMARY

The roles of Marine aviation are fully derived from its charter as the Marine Air-Ground Task Force's Aviation Combat Element. A fully integrated Aviation Combat Element provides a unique and essential blend of aviation support suitable to amphibious operation and complements the Ground Combat Element. Thus, the Marine Air-Ground Task Force protects its expeditionary character without sacrificing the tactical capability to execute the Amphibious Strategy.

The initiatives described today are designed to ensure Marine aviation continues to fulfill its obligation. Reorganization will be implemented where necessary to reap maximum combat potential with minimum overhead. Aircraft capabilities will be enhanced to support uniformity and offset the threat of tactical obsolescence. Readiness and training will be optimized to preserve a consistently high quality, responsive force for the protection of this Nation's vital interest.

We believe Marine aviation is oriented in the proper direction to meet challenges imposed worldwide. A balanced approach is one which prompts advancement in all areas of aerial warfare, and the budget request submitted recognizes that which is achievable fiscally and technologically. Congress has been a party in faith to this premise throughout our history. Your farsighted, yet thoughtful, appreciation of airpower has served the Marine Corps well in the past and, with your support, promises an innovative and progressive future.

Senator LEVIN. Thank you very much, General.

Admiral, let me lead off by talking about the shortfall that we have talked about this afternoon, and there are some other issues that you have raised that I also want to talk to you about which are important. The Navy cut about 450 aircraft from last year's plans, and as I understand it, the average Navy aircraft is going to increase by about 3 years, is going to retire principally as a result of that reduction in that plan, and my question is whether you agree the calculation is accurate, putting aside whether it is tolerable or not for a moment, is that an accurate calculation? In other words, under last year's plans, the average Navy aircraft would be 23 years old when retired, under current plans the average would be 26 years old when retired. That is what the CBO has told us and is that accurate?

Admiral DUNN. Yes, sir.

Senator LEVIN. Is that principally an affordability problem?

Admiral DUNN. Yes, sir, it is.

Senator LEVIN. So that——

Admiral DUNN. So may I amend that? It is principally an affordability problem but it is also a reflection of the fact that we have learned how to modify aircraft so that they will perform adequately for a longer period, and we have been able to upgrade our ability to assess the real age of aircraft in terms of fatigue life.

Senator LEVIN. But it is, I gather, even given the increase in life which would come from modifications, this is still longer than what you would like?

Admiral DUNN. We have never really established what we would like, Mr. Chairman. What you would like in an aircraft, I suppose, is all of your inventory about two years old, old enough to have all of the new contract rights worked off but young enough so you could do anything you wanted with it. That is unrealistic. I know in some previous testimony in years past people may have used an average life as a guideline, but we have not established an average aircraft life goal.

Senator LEVIN. You have established requirements, though?

Admiral DUNN. Yes, sir.

Senator LEVIN. And there is a shortfall of requirements?

Admiral DUNN. Yes, sir.

Senator LEVIN. Is that requirement based in part on average life or on the expected life?

Admiral DUNN. No, sir, the requirement is based on the war fighting requirements and the capabilities required to counter the threat.

Senator LEVIN. So to have the expected life or the average life of the plane is not factored into what your requirements are.

Admiral DUNN. I do not mean to be evasive, but I think we have to define what we are talking about with the requirements.

Senator LEVIN. However you define it. You said that was a shortfall of requirements. I will take your definition.

Admiral DUNN. Yes, sir. We need a certain number of a certain type of aircraft with a certain capability at a given point in time. If we take 1994 for example, as Mr. Hale did, we are short in total numbers of aircraft compared to our requirements.

Senator LEVIN. Does not the predicted life or expected life of the plane get factored into that?

Admiral DUNN. No, sir. That would factor into inventory.

Senator LEVIN. So that the shortage that you predict is based on the life expectancy of the planes?

Admiral DUNN. Yes, sir, in part.

Senator LEVIN. Right now the Navy is saying there is a 220 plane shortfall of the requirements that is based on your predicted life expectancy in part.

Admiral DUNN. Yes, sir.

Senator LEVIN. And that is in part based upon historical experience and projected modifications both? Does that not factor into it, I hope?

Admiral DUNN. It is, but let me go back and say that when we provided the information to Mr. Hale we provided information based on what has been predicted at a given point in time. As time moves on and we get more experience we find that we can change those predictions.

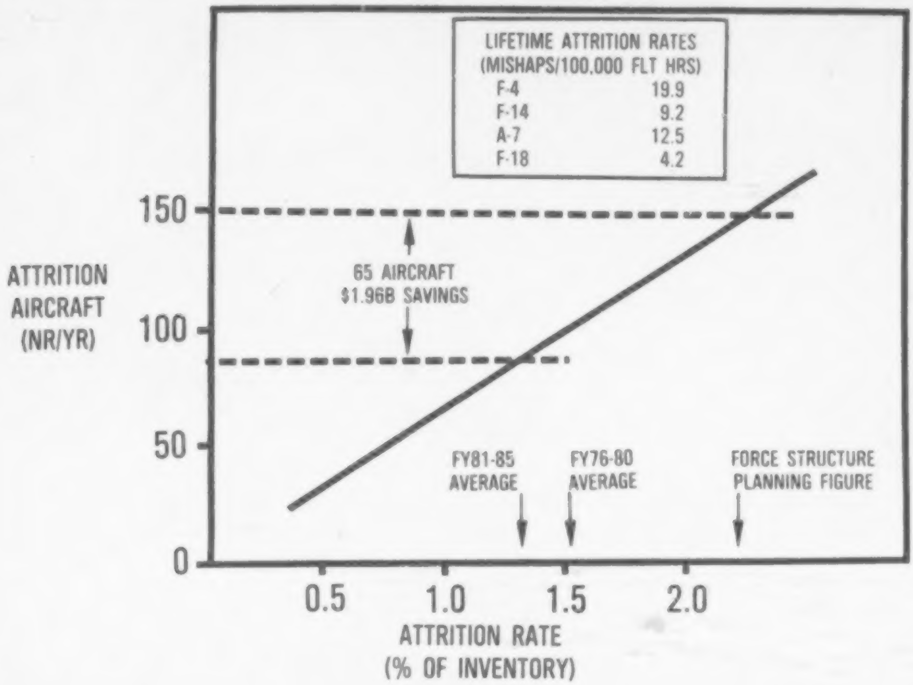
Senator LEVIN. Would you get together with Mr. Hale right after this hearing and tell him what changes you are making in your predictions? And then we will ask him to give us any analysis.

Admiral DUNN. Yes, sir, I can do that. I would like to share with you just one way those predictions can change, if I may.

Senator LEVIN. This is information he was not given?

Admiral DUNN. Yes, sir, that is correct.

AIRCRAFT ATTRITION



What this shows is aircraft attrition, which will certainly affect the aircraft inventory. If you look at the box way up at the top of this line, we compare the older aircraft with the newer aircraft, for example, the F-4 mishap rate was 19.9 per 100,000 flight hours whereas the F-14, its replacement is down to 9.2. Similarly, the F/A-18 mishap rate is only 4.2 as compared to 12.5 for its predecessor, the A-7. When we gave Mr. Hill our figures we used the nominal attrition rate. Our actual experience is better than the nominal attrition rate. A very small change in attrition rates, as shown on the abscissa of the graph, produces a large variation in the number of aircraft in inventory. That is the kind of thing that will make a difference in our numbers.

Senator LEVIN. I take it that the newer information could actually affect us one way or the other.

Admiral DUNN. Yes, sir.

Senator LEVIN. Would you give Mr. Hale the most certain information that you have?

Admiral DUNN. I will, sir.

Senator LEVIN. We would ask him for an updated analysis. On a different issue—let me get to the A-6, because that is a question of where we are trying to replace wings and it is kind of related to this issue. Press reports indicate, Admiral, that the Navy grounded over half of the A-6 fleet because of wing cracking problems, and we have provided some funds to replace those wings for several years. Can you first tell us why do we have half the fleet grounded or restricted from carrier operations at this time?

Admiral DUNN. Well, sir, the press reports are considerably overdrawn. We do not have half the fleet grounded.

Senator LEVIN. Or restricted?

Admiral DUNN. Or restricted. I have the numbers here but they are classified. If you would like to have them, I can provide them for the record.

Senator LEVIN. You had better hang onto them for later.

Admiral DUNN. All right, sir.

Senator LEVIN. Or you can provide them if we do not have a classified session. Then you can provide them for a classified record.

Admiral DUNN. Yes, sir.

Senator LEVIN. My time is up. I have to follow that up.

Senator COHEN. Admiral, given the choice between the purchase of two aircraft carriers versus increased production of tactical aircraft, what choice would you make?

Admiral DUNN. Two aircraft carriers.

Senator COHEN. Please tell us why.

Admiral DUNN. Those extra aircraft will not do us any good if we do not have ships to put them on, and the purpose of carrier air is to fly from a sea base, and the aircraft carrier is the sea base.

Senator COHEN. I understand that you have had some recent seaworthiness problems with the *Midway*. Would you like to discuss the nature of those problems?

Admiral DUNN. Yes, sir. I can sketch those out for you. *Midway* was commissioned in 1945 as a 45,000 ton aircraft carrier, and over the years with new equipment and heavier aircraft her displacement increased to somewhere in the vicinity of 75,000 tons, a considerable increase. We were fearful that the basic structure of the ship, the hull girder, was weakened so that it would not take battle damage. In addition, the ship had increased in draft significantly, and so a scheme was devised to strengthen the hull girder and simultaneously give the ship some more buoyancy by putting some blisters on the side. When those blisters were put on the side, huge 600-foot-long things on either side of the ship which actually widened the ship by some dimension the ship did indeed come out of the water, and it did indeed strengthen the hull girder. Unfortunately, there were two unforeseen side effects which were detrimental, and one was excessive salt waterspray on the flight deck, which is obviously bad for aircraft, and the other was a much more pronounced roll to the ship. It shows that we do not know as much as we would like about fixing up old ships, and it also shows the expense of trying to maintain and fix old ships.

Senator COHEN. As I understand it, one of the setbacks or negative features that go into increased aircraft production is the problem of having block obsolescence.

Admiral DUNN. Yes, sir.

Senator COHEN. Correct me if I am wrong, but I assume that the aircraft design is going to change much more rapidly than the design of an aircraft carrier.

Admiral DUNN. That's correct. Yes, sir.

Senator COHEN. Essentially what changes in the aircraft is the electronics. You upgrade and modify to put increased electronic capability do you not, in an aircraft?

Admiral DUNN. That is probably the thing which changes the most. You are correct, Senator. However, we learned other things, how to use different kinds of materials and different forms for aircraft, different engine performance.

Senator COHEN. Well, engine performance, but it seems to me that the most radical changes you have to confront is countermeasures taken against the aircraft, ECM and so forth, and you have got to take countermeasures against the countermeasures.

Admiral DUNN. Yes, sir.

Senator COHEN. Right?

Admiral DUNN. Yes, sir.

Senator COHEN. And therefore you build into the—as Senator McCain was saying—you build in anticipated changes in these new aircraft if you know it is going to be changing rather rapidly because of the new technology that keeps coming on line.

Admiral DUNN. Yes, sir.

SHIP DESIGN

Senator COHEN. Now, with respect to ships, however, do you anticipate any major changes in the design of the large deck aircraft carriers?

Admiral DUNN. No, sir. We have examined that, and the basic hull form and propulsion plant which are the most difficult things to change, will not change over the next 20, 30, and 40 years.

Senator COHEN. Well, as a matter of fact, when you face the block obsolescences of these new aircraft that you want to increase, then you actually will have additional costs, modifications of those aircraft which will add considerably to the aircraft themselves, and you may find a situation in which we are planning some new tactical, radically different tactical aircraft. Stealth is one thing that comes to mind that you can talk about generally in open session. You may find that we are adding more and more aircraft at a time when they might be obsolete by the mid-1990s or the year 2000.

Admiral DUNN. That is absolutely right. Yes, sir.

Senator COHEN. But the ships are going to remain the same.

Admiral DUNN. They will remain the same.

Senator COHEN. So if we are committed to 15 carriers, and I am referring to a statement made by Bing West, March 12, 1987, when he talked about how we could take out the Soviet ships if they decide to deploy them. He said we know what we need in carrier numbers and design. Therefore we should get on with building them now and resolve that portion of our strategic procurement plan, leaving time in the next few years for the more complex issues of radically new tactical aircraft and long-range weapons and what effects they will have upon our strategy. Of course, everyone here, including the chairman, says we all agree on 15 carriers. We need to have the 15 carriers. So I guess the question at this point is, why the Navy is voting for the two new carriers, anticipating they will have a different type of aircraft some time in the mid-1990s.

Admiral Dunn. That is certainly one of the driving factors. Yes, sir.

Senator Cohen. And we would be better off to spend the money on a ship that is going to last the 30 or 40 years as the *Midway* has done and then structure our budget in the coming years to take into account the new technology.

Admiral Dunn. Absolutely.

Senator Cohen. That is all I have, Mr. Chairman.

Senator Levin. Thank you.

Senator Kennedy. Thank you, Mr. Chairman.

PILOT RETENTION

Admiral Dunn, I notice that you did not mention any retention problems in terms of pilots. During the testimony of Admiral Carlson before Senator Glenn's subcommittee it was said the other serious skilled officer manning problem is our inability to retain sufficient numbers of midgrade pilots—lieutenants, lieutenant commanders. Our pilot shortage is now in excess of 1,000. The need to retain top pilots has become as crucial as the number of squadrons have expanded. The small project on pilot retention increase is not sufficient to raise our pilot shortfall. It continues unless we can compete adequately in the civilian sector in job satisfaction and pay, we may be unable to retain the number of experienced pilots we need. Is there any reason at all that you left out the problems in terms of the retention of pilots?

Admiral Dunn. Yes, sir, however in my opening remarks I submitted as my No. 1 priority, Navy end-strength growth but implicit in that was the people necessary to man the units. However, I did not say any more beyond that because this is an APN hearing rather than MNP or personnel hearing but I am more than glad to respond to your question, if I may.

Senator Kennedy. Sure, you can. Is it unrelated to the fact that Navy pilots like to fly new Navy planes? Is that completely unrelated in terms of the number of planes and the age of the planes? I am not a professional in it, but I heard that stated a good deal in my brief experience and contact.

Admiral Dunn. Well, certainly every aviator would like to fly the newest and the finest. That is not why we would buy new airplanes.

Senator Kennedy. No, but is it an insignificant or significant factor in terms of basic retention?

Admiral Dunn. It is.

Senator Kennedy. Let me finish.

Admiral Dunn. Excuse me.

Senator Kennedy. Whether they believe they have the top of the line in terms of the equipment that they are using? Is that significant or insignificant in terms of retention?

Admiral Dunn. It is moderately significant, sir. The main factors in pilot retention are family separation, pay, the ability to get an adequate amount of flying in a given time period.

Senator Kennedy. How has that changed in the last year?

Admiral Dunn. It has not changed in the last year.

Senator Kennedy. And what is it now in terms of the carriers?

Admiral Dunn. The average carrier pilot gets 25 hours of flight time per month.

Senator Kennedy. Well, is there anything else you want to add with regards to the shortage, pilot shortage?

Admiral Dunn. Yes sir. If I may add two things; one reason we are short of pilots at the lieutenant commander grade now is that in the years when they were going through flight training the pilot training rate was held down for fiscal reasons and we did not train enough aviators. When you apply todays retention rates, which are not as good as they have been in recent years, you come up with a shortage of aviators. We cannot do anything about the pilot training rates which is already behind us but we can learn a lesson and we can sustain the pilot training rate starting this year and in future years. As far as doing something to keep the pilots we now have in the cockpit and flying—money is always an attractive option, and if you can—if this committee could support the aviation officer continuation pay that has been requested in the President's budget, that would go a long ways toward helping with the problem.

Senator Kennedy. We know that the Defense Department claims about a $3 billion savings from its early carrier replacement plan. But other sources come out close to about $1 million of savings. And there are also those reviewing the purchase of various Navy aircraft that demonstrate if we were to accelerate the purchase of aircraft, we could achieve a savings of about $1.1 billion. Would you make any different decision in terms of the issue of the purchase of Navy aircraft versus the aircraft carriers? If we make a judgment that we think we can save by following what was the recommendation of the Navy in terms of the numbers of aircraft that was made two years ago rather than the new request, and if we make an estimate that that amount of savings is at least equal to the savings from buying the aircraft carriers early, do you express any choice about which way we ought to proceed?

Admiral Dunn. No, sir, I maintain that we have to buy long lead items this year and then go on to buy the aircraft carriers as proposed in the President's budget.

Senator Kennedy. When did you move to the aircraft carrier? Was it January of this year or did you express that view when the Navy was making its recommendation last year in terms of its surface force?

Admiral Dunn. Senator, I am going to have to beg off on that question, if I may. I was in Norfolk up until last December and just came into town about 2 months ago, and I was not privy to those decisions.

Senator Kennedy. Supporting that aircraft carrier.

Admiral Dunn. I was not privy to the budget process.

Senator Kennedy. Well, you have seen the stretchout in the request of the Navy in terms of its combat planes. Last year, the Navy's aviation plan for 1988 through 1994 called for purchasing 1,278 combat aircraft. This year's plan for the same period calls for only 850 combat aircraft—a reduction of 428. Could you indicate why the dramatic alteration and change in terms of that request?

Admiral Dunn. Well, sir, as our budget is firmed up we try to balance the budget and all of the many things that we think are needed. When we apply future money to aircraft in future years we get one number. As we get closer to reality and have to meet certain guidelines and budget reductions we are forced to constrain ourselves, and that causes a reduction in requested aircraft.

Senator **Kennedy**. My time is up, Mr. Chairman.

Senator **Levin**. Senator McCain.

Senator **McCain**. Thank you, Mr. Chairman. I would like to say that I share——

Senator **Warner**. Would you allow me to take one question, because I have to go to another hearing, Senator. I was sitting here listening carefully to your testimony, and I think Senator Kennedy raises a valid point about the retention of modern aircraft, and I suddenly thought back to my own very modest experience on and off carriers. Do we ask a little bit more of a Navy aviator flying off the *Midway* than flying off the *Nimitz* class?

Admiral **Dunn**. He has to be more precise in his operations around the ship. It generally takes more practice on the field before we bring him to the ship. Therefore it costs more money. The answer to your question is yes, sir.

Senator **Warner**. And if he had a choice of ships, he would take the *Nimitz* class, would he not?

Admiral **Dunn**. Absolutely especially at night. Yes, sir.

Senator **Warner**. Then I would follow on the retention figure. I think the retention rates on your land-based P–3 squadrons are far better than your at sea squadrons. Am I not correct?

Admiral **Dunn**. Traditionally they have been better, Senator Warner. But in recent years that retention has been falling as well. And as the economy does well and the airlines hire, those people are particularly attractive; I believe because they have the multiengine experience.

Senator **Warner**. Would you supply for the record the degree to which these contractors may be responsible for these very substantial fixes that you have got to put in these various aircraft?

Admiral **Dunn**. Yes, sir.

Senator **Warner**. I think there is a heavy cost there. I thank the Chair and I thank my colleague.

[The information follows:]

Contractor responsibilities for correction of defects are specified by individual contract warranties. or in some cases, correction of latent defects clauses. Specific terms and conditions differ from system to system; however, the Navy has been actively pursuing a policy of increased warranty protection requiring contractors to assume greater responsibility for the quality of their products.

Senator **Levin**. Senator McCain.

Senator **McCain**. Thank you, Mr. Chairman and Admiral. I share Senator Kennedy's concern about retention, and I was pleased to hear you say that it is your first priority. I think history proves that you showed these are going to be skewed in the wrong direction if we lose our experienced and talented people.

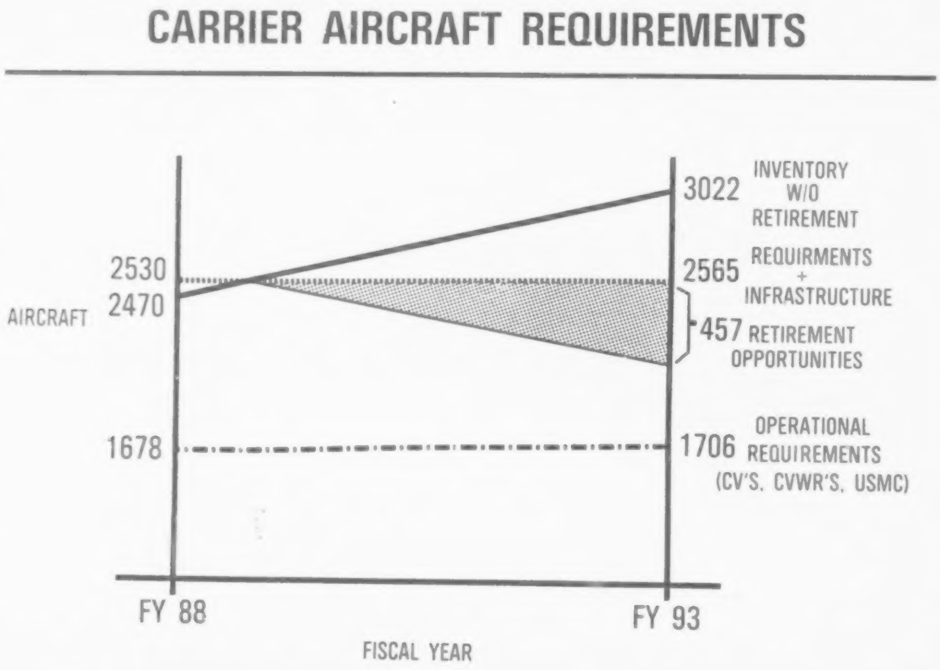
I also suggested to Secretary Taft yesterday, I believe it was, that it would be helpful if there is widespread recognition of the problem of pilot retention that we have. You or the services come up with some recommendations as to what measures the Congress could take to stem what some are predicting is a very serious exodus of pilots from the Navy, Marine Corps, Air Force, and

Army. I also, I think this committee I cannot speak for, but I think this committee would certainly support continuation of the AOCP, but it is not clear to me if that is sufficient, if the problem is as severe as has been described to me by some. And also, let me add not only is the *Nimitz* class carrier more desirable from a landing standpoint, but I would guess that air conditioned ships are much more pleasant, and I think we could find a difference in retention rates on older versus newer carriers. Would you agree with that?

Admiral DUNN. Well, I would agree with that, Senator. Of course, retention to a certain extent is also a function of leadership, and I do not want to minimize that. We have put some very good leaders in some of those older ships to compensate. However, those older ships take more people. The engineering plant in the *Coral Sea* and the *Midway*, for example, take about 50 more people than the engineering plant in the *Nimitz* class, and so as we move forward we are looking not only for a bigger ship but better sustainability so we can reduce the manpower cost.

Mr. MCCAIN. You said during your prepared statement that you would appreciate the opportunity to respond to some of Mr. Hale's report. Would you go ahead and make some of your responses?

Admiral DUNN. Yes, sir. I would like to describe for the committee how we will manage some of the shortfalls that Mr. Hale highlighted.


CARRIER AIRCRAFT REQUIREMENTS

Now, these numbers you see here will be a little bit different than Mr. Hale's numbers, however, they are consistent. It is just that we used a different reference. He used all aircraft from budget activity one, which are all combat aircraft. That includes things like the land-based P-3 and Marine helicopters that do not normally go aboard ship. My numbers include only those aircraft that would go aboard aircraft carriers. I do not do that to confuse you. It is just that we developed our slides at different times, but the numbers would translate if we made a comparison. The dotted line shows the requirements for carrier air wings, the active carrier air wings, the reserve air wings, and the Marine Corps from 1988 through 1993. We now have on board the 2,470 aircraft, so you see, we actually have more aircraft than we need to go aboard the aircraft carrier. Now those extra aircraft comprise what we call pipeline; that is, aircraft that are scheduled for some sort of rework, filling the fleet replacement squadrons, and in our test facilities. Or they are ashore with the Marine Corps. If we retired none of those aircraft between now and 1993 (with the procurement schedule we now have in the President's budget), we would be up to 3,022. If we retire the aircraft at our planned rate we would be down to that point and of course we will manipulate retirement rate through inspections and extensions of retirements, through modification programs and through other such things. So while we are indeed short of total aircraft inventory compared to requirements when it comes to putting aircraft on the ships and sailing them, we have enough to fully satisfy the shipboard requirement.

Senator McCAIN. Let me question that slide one second. Would you put that back up? I apologize, Mr. Chairman. Right now you have a differential between 1,678 and 2,470, roughly 800 aircraft.

Admiral DUNN. That is correct.

Senator McCAIN. You say you can still do the job with a differential of about half of that. In other words, you are down to about 2,100?

Admiral DUNN. I beg your pardon.

Senator McCAIN. In 1993 you will have an operational requirement for 1,700 aircraft and you have an on-hand inventory of about 2,100 right?

Admiral DUNN. That is correct if we retire everything.

Senator McCAIN. Then it seems to me you are able to do the job in 1993 with half the additional aircraft that you have today from 800 surplus over operational requirements in 1988 to a 400 surplus of aircraft in 1993.

Admiral DUNN. That 457 number you see there are retirement opportunities. In other words, if we go in accordance with our present schedule we will retire those airplanes. If we do special things to the aircraft we will not retire them and we will maintain them at the 2,565 or above with new procurement.

Senator McCAIN. Okay. You still have a smaller inventory on hand in excess of your operational requirements in 1993 than you do in 1988. Is that wrong?

Admiral DUNN. Senator, we have new purchases coming in. The new purchases offset the planned retirements, and that is how we can remain at the 2,565 level.

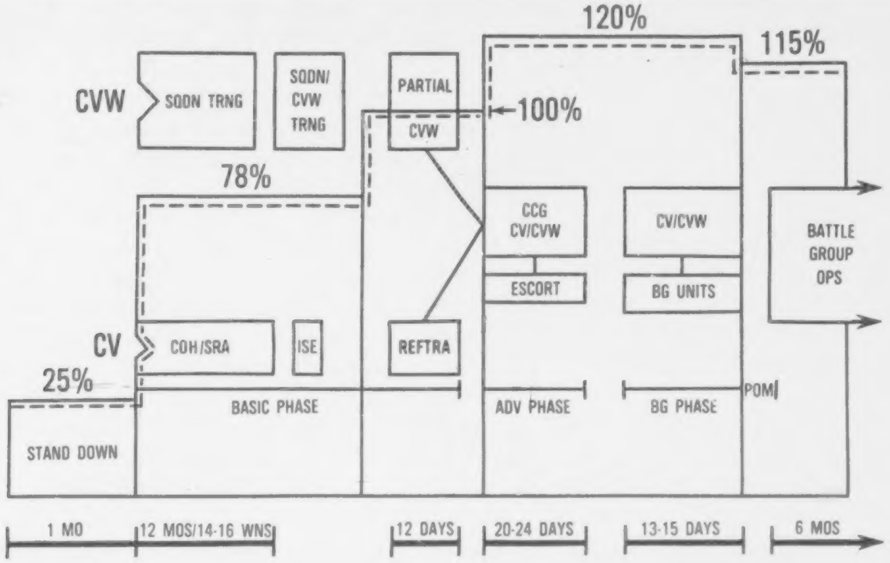
Senator McCAIN. Okay.

Admiral DUNN. My apologies.

Senator McCAIN. Thank you. Go ahead.

Admiral DUNN. Just to get into more detail as to how we can manage the carrier air wing shortfall we have, I would like to put up a slide on the carrier air wing turnaround.

FLIGHT HOUR FUNDING


120%
115%
CVW
SQDN TRNG
SQDN/ CVW TRNG
PARTIAL CVW
100%
78%
CCG CV/CVW
ESCORT
CV/CVW
BG UNITS
BATTLE GROUP OPS
CV
COH/SRA
ISE
REFTRA
25%
STAND DOWN
BASIC PHASE
ADV PHASE
BG PHASE
POM
1 MO
12 MOS/14-16 WNS
12 DAYS
20-24 DAYS
13-15 DAYS
6 MOS

I would like to spend just a minute to go over what a typical peacetime carrier development is like. As the ship comes back from a deployment to the Pacific, Indian Ocean, Atlantic or wherever, it goes through a period of standdown for about 30 days where people visit their families and so forth. Then they begin working up for the next cruise and they start with individual squadron training. While the ship is in either overhaul or a selected restricted availability, we follow through this whole flow until finally we get to where the carrier air wing and the ship and escorts all married together. Then we have a battle problem and go on a cruise. During that standdown phase and during that phase when the ship is in overhaul or selected restricted availability, if we have a shortage of a particular type of aircraft we will take aircraft out of that squadron and transfer them to squadrons which are deploying. This is the crossdecking that Mr. Hale was talking about. We do not like to do this. But we can manage it this way. In the event we have to deploy all 15 ships at once, we would take aircraft out of the pipeline, out of the fleet replacement squadrons, out of the test and evaluation facilities, and deploy full-up air wings at that time. We set our requirements higher because we do not want to fly the aircraft at wartime rates.

Senator McCain. Thank you, Mr. Chairman.

Senator Levin. Thank you, Senator McCain. Senator Thurmond.

Senator Thurmond. Thank you, Mr. Chairman.

DIFFERENT TYPES OF NAVY AIRCRAFT

Admiral, would you tell me how many different types of aircraft the Navy has and your appraisal of the performance of each very briefly?

Admiral **Dunn**. That is a tall order, sir. I could tell you—would it be sufficient to talk about the number, the types and numbers aboard an aircraft carrier?

Senator **Thurmond**. Would you like to supply that for the record?

Admiral **Dunn**. Yes, sir, I can supply it for the record.

Senator **Thurmond**. I just want to get your appraisal of each type of aircraft as to its performance.

Admiral **Dunn**. All right, sir.

Senator **Thurmond**. Now, the Navy has all volunteers, do they not?

Admiral **Dunn**. Yes, sir.

Senator **Thurmond**. They do not draft anybody?

Admiral **Nunn**. No, sir.

Senator **Thurmond**. You do recruit but do not draft?

Admiral **Dunn**. Yes, sir.

Senator **Thurmond**. It has not been necessary to draft?

Admiral **Dunn**. It has not been necessary.

NAVY RECRUITMENT

Senator **Thurmond**. Are you satisfied with the present situation in your recruitment? Is it giving you good personnel?

Admiral **Dunn**. We are getting absolutely first rate personnel and I have never seen better caliber people since I have been in the Navy. That is true whether it is officer and enlisted and includes Navy and Marines. We are not getting all we want because we have limits on the numbers of people we can recruit, but we are recruiting all we can, and they are good quality.

Senator **Thurmond**. I presume the morale is good then because your performance is good?

Admiral **Dunn**. Yes, sir.

Senator **Thurmond**. When the morale is good generally good performance follows, does it not?

Senator **Thurmond**. Now, about the carriers, these carriers cost a lot of money, but a great many people feel that they are indispensable. Just how strongly do you feel about these carriers? Would it be a better investment to put that money in more planes, more maintenance, and other things, or put it into carriers?

Admiral **Dunn**. No, sir, the budget, as has been presented, is a balanced budget. We have put something in all of the categories we think are important up to the appropriate levels and the aircraft carriers are very important. They are very important because they are the centerpiece of the Navy. Unless you control the air over the sea, you are not going to control the sea or be able to do the things you want from the sea. It takes the aircraft carriers to do that.

Senator **Thurmond**. In fact, I heard a Navy man say he who controls the seas controls the world. Is there much truth in the statement?

Admiral **Dunn**. Absolutely, but you must control the air over the sea, and then you can control the sea, and go on from there.

Senator **Thurmond**. Well, you would have to control the air over the seas to control the seas, would you not?

Admiral DUNN. Yes, sir, absolutely.

Senator THURMOND. One advantage in aircraft carriers, as I have seen it, you can go right up near an enemy and that is about the only way you could do it, is it not, unless you used intercontinental missiles?

Admiral DUNN. Of course, if you are going to use intercontinental missiles, I think you are talking about a different kind of war, but if we are talking about maintaining a forward strategy, then the aircraft carrier is the centerpiece of that.

Senator THURMOND. Well, does it have a certain psychological effect and would it not have on the Soviet Union if we had carriers within striking distance of them where we had a right to be out in the sea because you could not always get on land to places where you could have that opportunity.

Admiral DUNN. Well, that is right. Where we can use land bases we should use land bases but they are not always secure or available.

STRETCHING OUT AIRCRAFT PROCUREMENT

Senator THURMOND. Now, I want to ask you this question. What would be the impact of stretching out of aircraft procurement and modifications on near term capability and meeting the threat with the Navy opting for the budget recommendations to accelerate the two-carrier procurement?

Admiral DUNN. To accelerate the two carriers beyond what we have?

Senator THURMOND. Yes, sir.

Admiral DUNN. I just do not believe that. That is with——

Senator THURMOND. What would be the impact on that?

Admiral DUNN. I do not believe we have the capability to accelerate those two carriers very much. There is some possibility, but I think the way the President's budget has been structured to accommodate long lead purchases and could not be accelerated more.

Senator THURMOND. Well, the point of this question is what would be the impact if you were going to stretch out the aircraft procurement and modifications in order to get these carriers?

Admiral DUNN. The impact is, we are going to have a slight aging in the aircraft inventory as Mr. Hale pointed out, and we will have to manage the aircraft that we do have through cross-decking and with modification programs.

Senator THURMOND. And is this going to be advisable to take that course?

Admiral DUNN. Yes, sir.

Senator THURMOND. To stretch out that aircraft procurement in order to get the carriers?

Admiral DUNN. Yes, sir, in my opinion it is.

Senator THURMOND. And you think it would be advisable?

Admiral DUNN. Yes, sir.

Senator THURMOND. When you get—let us see, how many carriers do we have now?

Admiral DUNN. We have 14, sir.

Senator THURMOND. So this will be 16 carriers. Do you feel when we get those two and of course that would be 1996, would it not, that the first would be delivered?

Admiral DUNN. Yes, sir, 1997 would be the first time we would use it as part of the fleet.

Senator THURMOND. When is the second?

Admiral DUNN. 1999

Senator THURMOND. When we get those two do you think if we keep that number that will be adequate to give the Navy what it feels it needs in order to control the seas and the sky above the seas?

Admiral DUNN. First of all, if I may, sir, we will have 15 deployable carriers, not 16.

Senator THURMOND. Is that going to be the maximum number you are going to work toward?

Admiral DUNN. The way it is now, yes, sir. We now have 14 carriers. We will have a 15th carrier when the *Abraham Lincoln* gets commissioned in 2 years. These are not two new carriers, sir, you understand. These are replacements for existing carriers.

Senator THURMOND. You say you have 16 in all?

Admiral DUNN. No, sir, 15. Fifteen deployable carriers. We will have one in the service life extension program of about 3 years' duration which will not be available to us.

ESTIMATED CARRIER LIFE

Senator THURMOND. Now, what do you estimate is the life of these carriers?

Admiral DUNN. Thirty years is the nominal life.

Senator THURMOND. That is about the life of the present carriers, I guess, is it not?

Admiral DUNN. The present carriers, the nominal life is 30 years, but we put them through an extension program which would give them another 15 years of life.

Senator THURMOND. Another 15 years?

Admiral DUNN. Yes, sir, and let me clarify one point. With the SLEP, the service life extension program, the nominal life is 45 years.

Senator THURMOND. I see. I think my time is up. Thank you, Admiral.

Admiral DUNN. Yes, sir.

Senator THURMOND. Thank you, Mr. Chairman.

Senator LEVIN. Thank you, Senator Thurmond. I will yield to Senator Kennedy.

MODERN MUNITIONS

Senator KENNEDY. Thank you, Mr. Chairman. I just wanted to mention that Admiral Crowe stated in a memorandum to Deputy Secretary of Defense Taft that modern munitions were among his highest priorities. And Admiral Hayes, who is Commander-in-Chief of the Pacific Command, stated that he only had a few days supply of modern munitions, such as the Sparrow radar guided air-to-air missile. In light of these comments, the Navy's action this year is difficult to understand. Last year, you planned to buy nearly 1,600

Sparrow radar guided missiles in fiscal year 1988. This year, you reversed course and proposed to buy no Sparrows in fiscal year 1988. Could you indicate why?

Admiral DUNN. Well, yes, sir. We are planning on the AMRAAM coming into the inventory.

Senator KENNEDY. When does that come in?

Admiral DUNN. In fiscal year 1989.

Senator KENNEDY. I understand that it will not be in service for at least 4 years. That is the information that has been made available.

Admiral DUNN. That is correct. The USAF starts receiving AMRAAM in 1989, the Navy follows by in 1991.

Senator KENNEDY. So you are stopping now in terms of Sparrows and it is going to be four years before the AMRAAM comes in.

Admiral DUNN. Yes, sir.

Senator KENNEDY. What proportion of the wartime requirements does the Navy have out today?

Admiral DUNN. That is a confidential figure. I could supply that for the record, for the confidential record, or we could supply it to you later, sir, if you like.

[The information follows:]

The Navy currently has [deleted] its programming objective and [deleted] its planning objective. With the addition of the procurement authorized through FY 1987, the Navy will be at [deleted] its programming objective and [deleted] planning objective.

Senator KENNEDY. Well, I think it ought to be. It ought to be supplied for the record, and it is obviously confidential. But if you look at your own figures, you have to ask, is it not appropriate to say, given what that figure is, why not buy more Sparrows to fill the gap in the modern munitions? I could ask you in executive session if you want to provide it there but it is well established in the public dialogue and debate here in the Senate that we have shortages of modern munitions. We will not declassify the figure on Sparrows but it is not very generous. But you are buying no Sparrows, when a year ago you had indicated that you were going to buy 1,600, and according to my information the AMRAAM is not coming in for another four years. The confidential figure that we are talking about, the proportion of wartime requirements of Sparrows that we have is not very generous. It is a good deal less than that. I would be interested in your view. Is it generous? Do we think we can handle the threat at current inventory levels? Or are you troubled by it? Or what is your answer?

Admiral DUNN. The answer is, I think we can handle it. If AMRAAM should slip we will be coming to you with a budget modification and we will need some help if it should slip significantly.

Senator KENNEDY. Well, I will submit some other questions to you, and I am going to look at your answers very carefully when you have the commander in chief of the Pacific, Admiral Hayes, talking about a few days' supply and the Navy had made that request for a substantial buy and then you terminate it; and you as a professional officer can state looking at that for a 4-year gap between Sparrow and AMRAAM and state as a professional officer that you are satisfied with it. I want to make sure that I get that particular testimony, because I am going to watch that and hold you to it.

Admiral **Dunn**. All right, sir.

Senator **Levin**. Just one follow-up on that. Is the AMRAAM coming in earlier than expected last year?

Admiral **Dunn**. I would like to defer to Admiral Wilkinson.

Admiral **Wilkinson**. I do not think the AMRAAM is coming in earlier. As you know, that is an Air Force program, or it is a joint program with the Air Force as the lead service. The Air Force starts buying AMRAAMS in fiscal year 1987.

Senator **Levin**. But it is not coming in earlier, what has changed? I mean, last year we were told that we knew the AMRAAM was coming and we were told we still were going to want and need about 1,600 Sparrows this year and now we are told, well, no, we do not need any because the AMRAAM is coming, but the AMRAAM was coming last year, and it is not coming any faster this year, so what has changed?

Admiral **Wilkinson**. As far as the Navy's program, nothing. We are still buying AMRAAMS where we had planned to last year.

Senator **Levin**. But why are we not buying Sparrows as we said last year we would do?

Senator **Kennedy**. And was needed?

Admiral **Wilkinson**. It was an overall affordability issue to try to get a balanced program.

Senator **Levin**. In other words, you had to cut something in order to raise money for something else?

Admiral **Wilkinson**. We do that every year, Senator.

Senator **Levin**. I understand but that is the answer.

Admiral **Wilkinson**. In every program.

Senator **Levin**. Is that not the answer? You had to cut something in order to get money for something else? Is that not what affordability means?

Admiral **Wilkinson**. Well, you can say that about everything in the budget.

Senator **Levin**. Of course. Is that not the direct answer to Senator Kennedy's question on the Sparrow? We would like them but we wanted to use the money somewhere else even more?

Admiral **Wilkinson**. Yes, sir, that is it.

Senator **Levin**. And the where is obvious. Then we have to weight what we were told last year. We got a signal from the last year. It was called a budget request, and that budget request said no carrier request for 1988, no carriers for 1989, no carrier for 1990, no new carriers for 1991. That is what we were told last year, and we were told last year we were going to have for the next 4 years, 1,278 Naval planes. That is what we were told last year. And we were told 1,600 Sparrows. Now literally 6 months later we are told to forget the planes. We are cutting that from 1,278 to 850. Forget the Sparrows altogether. Forget that we told you we did not need the money for aircraft carriers until the early nineties. We want to go right now. Now, something has had to have changed. Obviously, it is cheaper to fly a new plane than it is an old plane and it is cheaper to sail a new carrier than it is an old carrier. That is obvious. That was true last year, I presume. It is more expensive, is it not, to operate an older ship, you say?

Admiral DUNN. Yes, sir, it is.

Senator LEVIN. I think Senator McCain is right. I have no doubt about it. It was more expensive last year to operate an older ship. It is more expensive to operate an older plane. That was true last year, but last year we were told what I just indicated, and without any change that I can see in any of those underlying facts in terms of whether cheaper or more expensive to operate something that is older or newer without any change at all, suddenly we are trashing the Sparrows, cutting the aircraft, and accelerating two aircraft carriers. And the only answer that we are given is, you save money if you accelerate two aircraft carriers. That was true a year ago, that you save money if you accelerate two aircraft carriers. By the way, I do not doubt that for one minute. There may be a difference as to whether you save $1 billion or $1.3 billion or $3 billion. GAO will give you the figures on that, but I do not doubt it is cheaper to buy aircraft carriers now than later, and by the way, I am not doubting here that we should have 15 aircraft carriers. The question is when do you replace the two that you have described? But it is just this massive change in signals that we are suddenly given that is absolutely befuddling to me. And so my question, I guess, is this. Was it not also true last year that it was cheaper to operate a new carrier than an old one?

Admiral DUNN. Yes, sir.

Senator LEVIN. My time has expired. Senator McCain.

Senator MCCAIN. Mr. Chairman, I think it might be well to point out when we are talking about the cuts as I mentioned earlier that last year the Navy and DOD came over here with a request of $6.5 billion for combat aircraft, and the Congress in its wisdom appropriated $5.9 billion. I am sure that that decision was well justified because of the overall reductions in the defense budget. I think it is important to point out also that Sparrow's reduction in buy of Sparrows which I also share your and Senator Kennedy's very real concern about was the announcement of that reduction in funding on the part of DOD, the announcement was made in May 1986, and a memorandum came over from Deputy Secretary of Defense Taft explaining exactly where the money is coming from for these two aircraft carriers. So I share your concern about the Sparrows but I find it a little difficult to make a connection between Sparrows and two additional aircraft carriers—especially in light of the fact that the Secretary of Defense has sent over a memo stating where the money will supposedly come from in the budget, but not from the purchase of Sparrow missiles. But I would like to join you and Senator Kennedy. I think it is disconcerting to the Congress to be able to make the kinds of decisions that are necessary when there is a rather, to say the least, unusual change in the five-year plan which was totally unanticipated by this committee as short a time ago as a year ago. I think they could have done a much better job at preparing the Congress for an obviously enormous change in the five-year plan. Thank you, Mr. Chairman. I have no more questions.

A-6 FLEET

Senator LEVIN. Thank you, Senator McCain. Just a couple more questions. I was asking you, Admiral, about that A-6 fleet issue, and I asked why do we have half the fleet grounded or restricted from carrier operations at this time as reported in the press, and you indicated, I think, that that article is not accurate, and you were answering that, and my time ran out. Do you want to give us the accurate facts on that?

Admiral DUNN. Yes, sir, I thought I had—do you have it?

Senator LEVIN. Do we need a closed session for that answer?

Admiral DUNN. I believe we do, sir.

Senator LEVIN. Okay. Let us hold that off, or you can give it to us for the record. There was a report in Newsday newspaper on March 3 that more than half of the Navy's fleet of Grummond-built A-6 bombers have been grounded or restricted because of possible problems with the airplane's wings, the Pentagon said yesterday. So are you saying that the Pentagon did not say that?

Admiral DUNN. I don't know what information was given to a reporter.

Senator LEVIN. Or whether they said it or not, it is not right?

Admiral DUNN. My best information is, it is not right, and I would like to correct it.

Senator LEVIN. Okay, we will accept that for the record.

[The information follows:]

In February, the Navy grounded [deleted] A-6E aircraft and imposed flight restrictions on [deleted] additional aircraft as a result of the continuing investigation into the loss of a Navy A-6 near the Naval Air Facility, El Centro, California. As of 15 April 1987, all aircraft had been inspected. [Deleted] aircraft remain grounded [deleted]. All others have been returned to flight status, [deleted] under temporary flight restrictions pending depot level inspection/rework. [Deleted.] The Navy has a total of [deleted] A-6 aircraft.

On 3 March 1987 the A-6 aircraft inventory was inspected for wing problems. The aircraft were in the following categories at that time:

[Deleted.]

As the aircraft were inspected, they were returned to service or put into grounded or "3G" restricted category.

Since that time, more inspections have been made, and the status has changed somewhat. The current status is as follows:

[Deleted.]

Admiral DUNN. It may have been right when it came out, but these things change as time goes on. And I can provide the figures for you later, sir.

Senator LEVIN. Why do you not tell us what was correct on March 2 when the Pentagon allegedly made that statement.

Admiral DUNN. Yes, sir.

Senator LEVIN. Would you also, though, talk to us a bit about the budget request for that program? Now, the budget as I understand it which has been submitted by the administration does not sustain the even minimum modification rate to rewing the A-6s which is contractually required, so that we are going to be paying a penalty. Is that accurate?

Admiral DUNN. I hope we will not pay a penalty, sir, because we have tentatively identified some moneys that we would like to shift over to that particular line in the President's budget to bring the contract up to the minimum.

Senator **Levin**. You are going to amend your budget request?

Admiral **Dunn**. We are going to work with your staff on what the proper procedures to do that, sir.

Senator **Levin**. To amend the budget request?

Admiral **Dunn**. Yes, sir.

Senator **Levin**. Okay, and can you tell us how many are being rewinged in 1987 and what the budget requested.

Admiral **Dunn**. Yes, sir. It will take me a minute, sir, to find the data.

AV-8B

Senator **Levin**. Let me ask the General a question about the EA-6Bs—I am sorry, the AV-8Bs. The number we are producing in 1987 is 42 and that is being cut in the request to 32. My question is, does that trouble you?

General **Smith**. The answer is, of course it troubles me, but in order to present a balanced budget we had to come down in AV-8B procurement. The impact is that it will stretch the buyout of the AV-8B by 4 years and delay AV-8B squadron fillout by another 12 months.

Senator **Levin**. Do you have the increase, if any, in the per unit cost of the AV-8B as a result of this stretchout?

General **Smith**. I would like to provide that for the record.

[The information follows:]

AV-8B Costs

The cost associated with stretching the AV-8B procurement is $1.6 million per aircraft.

Senator **Levin**. We would be happy to have that for the record. Thank you.

Admiral **Dunn**. Admiral Wilkinson has the answer to your question, Senator Levin.

[The information follows:]

The per unit weapon system cost of the AV-8B as reflected in the budget and at the fiscal year 1987 procurement rate of 42 aircraft per year is shown in the following table:

WEAPON SYSTEM COST

[Dollars in millions]

	Fiscal years—	
	1988	1989
Budget request (32/year)	$19.6	$21.5
Fiscal year 1987 rate (42/year)	19.1	19.7
Unit cost increase	.5	1.8

Admiral **Wilkinson**. If I may, sir. Currently we have 120 wings on order for the A-6. We plan to start installing them early next year. We have 72 ordered in 1987, and we should order 72 wings in 1988, 25 above our request of 47.

Senator **Levin**. What is the minimum you need to carry out the program contractually? What is the contractually required minimum?

Admiral **Wilkinson**. We would like to buy 72 wings a year. That is what our option is.

Senator **Levin**. Am I accurately describing that as a contractually required minimum modification rate?

Admiral Wilkinson. No, sir, it is not a minimum, but it is our optimum rate. It is the maximum rate we can build wings.

Senator **Levin**. Does the unit cost of rewinging go up if it is lower than that?

Admiral **Wilkinson**. Yes, it does.

Senator **Levin**. Do we know how much it would go up?

Admiral **Wilkinson**. We can provide that for the record.

[The information follows:]

A-6F AIRCRAFT

The fiscal year 1988 unit costs for wing modifications using the new composite wing varies according to quantity as depicted in the following table:

Unit cost/Wing set

Quantity	*Millions*
29	$3.232
36	3.140
45	3.047
54	2.974

These quantities are additive to the 18 wing sets planned for incorporation in new production A-6F aircraft.

Senator **Levin**. That would be helpful.

Senator McCain, do you have any further questions.

Senator **McCain**. No, thank you, Mr. Chairman.

Senator **Levin**. Let me thank you gentlemen. Admiral, I think you said this was your first appearance in front of the committee.

Admiral **Dunn**. Yes, sir.

Senator **Levin**. We particularly appreciate that. You testified like an old trooper. I guess that is the wrong image, but at any rate we thank all of you for your cooperation, and the material you said you would supply in executive session. If Senator McCain has no objection I would ask that you submit that for the record in classified form so that we will not go into closed session here. Instead, you can submit that in classified form and we will maintain a classified record as well as an unclassified record. Thank you all.

Admiral **Dunn**. Thank you.

[Questions for the hearing record, with answers supplied, follow:]

QUESTIONS SUBMITTED BY SENATOR CARL LEVIN

AGE OF AIRCRAFT

Senator **Levin**. Mr. Hale, you note in your testimony that the average age of the fighter and attack aircraft is declining and will reach 10.3 years by 1994. This seems contradictory since you note that the force structure is increasing and the procurement plans are declining. Why is the average age decreasing in the face of procurement stretchouts?

Mr. **Hale**. Though the average age of 10.3 years for the Navy's fighter/attack fleet is a decrease from today's average age of 10.7 years, this represents a near term decrease followed by an increase in the 1990s. Navy fighter/attack aircraft average age decreases from 10.7 years in 1987 to 9.4 years in 1990 as the Navy retires large numbers of older F-4, A-7, and A-4 aircraft, and as the relatively large numbers of planes bought or requested in the period from 1983 to 1988 are delivered. The average age of the fleet increases from 9.4 years to 10.3 years by 1994 as the trends to smaller procurement and the completion of retirement of many previous generation aircraft make themselves felt.

AIRCRAFT SHORTFALL

Senator **Levin**. Admiral Dunn, I understand that the Navy worked closely with the Congressional Budget Office in providing inventory and planning data in calculating inventory requirements. Is there any data that would alter the results of the CBO analysis of your current requirements which you did not provide to them?

Admiral **Dunn**. There is no current data that would alter the CBO analysis of current requirements.

Senator **Levin**. Have any of the data or factors you provided to CBO been changed in a manner to substantially alter the results of the CBO analysis?

Admiral **Dunn**. The factors which were provided CBO for analysis change constantly. However, given the assumptions that CBO used in their analysis, the conclusions would not change significantly.

SPARROW PROCUREMENT

Senator **Levin**. I understand that there is a 4-year gap before AMRAAM missiles are delivered to the fleet. Is that the case?

Admiral **Dunn**. Yes. There is approximately a four year gap between the last Sparrow procurement and the first AMRAAM delivery to the fleet, the gap between last Sparrow delivery and first AMRAAM delivery is approximately two years.

Senator **Levin**. Do you believe continued procurement of AIM-7 missiles would be beneficial to reducing that gap?

Admiral **Dunn**. The gap between Sparrow and AMRAAM appears acceptable.

Senator **Levin**. Last year the Navy planned to buy 1,600 AIM-7 missiles in fiscal year 1988, but the budget this year proposes no further procurement. Have you satisfied your requirements for AIM-7 missiles?

Admiral **Dunn**. No, we have not satisfied our requirements however with the additional 4,363 AIM-7 missiles and 972 RIM-7 missiles procured during fiscal years 1985, 1986, and 1987, a once severe inventory shortfall has been reduced to an acceptable level.

Senator **Levin**. Last year the Navy planned to buy 1,600 AIM-7 missiles in fiscal year 1988, but the budget this year proposes no further procurement. What is the impact of terminating procurement in fiscal year 1987?

Admiral **Dunn**. The Navy intends to terminate Sparrow procurement upon completion of the fiscal year 1987 buy. The decision to terminate Sparrow procurement was based upon priority/affordability considerations together with the view that the Advanced Medium Range Air to Air Missile (AMRAAM), the follow-on to Air Sparrow, is proceeding satisfactorily. In view of the progress of AMRAAM testing, the relative ease of converting AIM-7 to RIM-7 missiles and constraints imposed by budget limitations, the decision to terminate Sparrow procurement, though leaving the Navy below inventory objectives, maintains a reasonable sustainability level and is consistent with "NECKDOWN" (reducing the types of ordnance in the fleet) plans.

AIRCRAFT SHORTFALL

Senator **Glenn**. Admiral Dunn, Mr. Hale's testimony states that under the current plan the Navy and the Marine Corps will have a *shortage of 222 aircraft*, spread among 12 different types of fixed and rotary wing aircraft, out of a total planned inventory in 1994 of 3,863 aircraft.

CBO interprets this shortfall "as exacerbating problems of aging and maintenance in peacetime and potentially reducing capability in wartime."

Do you agree with this interpretation?

Admiral **Dunn**. I agree with Mr. Hale in the broadest sense since what he says is ultimately true, but the problem is one that can be overcome. It would be most fortunate if the Navy could buy the extra 222 aircraft to fill the CBO projected shortage in 1994, however it becomes a matter of budget priorities. The 222 shortfall spread among the different communities is a very manageable figure. Although average aircraft age does increase, we are finding that our aircraft are lasting longer than projected. The F-14, for instance, has had its service life extended from 6,000 flight hours to 7,500 flight hours. This equates to a life span of 25 years. The addition of the new onboard structural and engine monitoring systems will provide the ability to determine exactly how much of the safe aircraft structural life actually remains. Initial indications are that more service life will be available than forecast when the aircraft was purchased.

As Mr. Hale stated, maintenance man hours increase with aircraft age, however, this is not an overwhelming problem.

To preclude reducing the combat capability of the older aircraft in wartime, modification to aircraft avionics and in some cases airframes/engines (F-14D for example) upgrades the planes capabilities and keeps pace with the expected threat. This is an ongoing program and will be continued.

WEAPONS AQUISITION PLAN COORDINATION

Senator GLENN. Admiral Dunn, I was very pleased to learn of the Navy's efforts in developing a Strike Weapons Acquisition Plan. In my opinion air-to-ground weapons, especially stand-off smart weapons, have not received the priority they require by any of the services.

My concern, however, is a continued proliferation of strike weapons between the Navy, Air Force and to a lesser extent, the Army. What has the Navy done to coordinate the implementation of your Weapons Acquisition Plan with the other services?

Admiral DUNN. The Navy has coordinated weapons acquisition with the Air Force and Army to the maximum extent possible. Currently we share general purpose bombs, Maverick, Bigeye, Harm, Shrike, Harpoon, Gator, rockets, machine gun ammunition and several special access air-to-ground programs with the Air Force. Joint programs with the Army include Hellfire, Bigeye, TOW, rockets, machine gun ammunition and special access programs. Some of the major factors limiting jointness on all weapon programs are the design specifics required for operations from the Navy's aircraft carriers. The existing carrier weapons elevators place limits on the overall length of weapons and containers. The Center of Gravity and moment arm limitations for launch and recovery from an aircraft carrier generally dictate a nominal 2,000-pound maximum weight for Navy weapons. The Air Force and Army have valid requirements for some weapons much larger and heavier than the Navy can accept. We have briefed every weapons program to the Air Force and obtained briefings on their programs to ensure jointness to the maximum extent possible. In those areas where a weapon does not meet joint service requirements we continue to share development information and technology to drive costs to the absolute lowest levels.

AIRCRAFT MODIFICATIONS

Senator GLENN. Admiral Dunn, you indicated in your prepared statement that the Navy has had to reduce aircraft readiness accounts to the "bare minimum." In reviewing two of the readiness accounts in the fiscal year 1988 request—Aircraft Modifications and Aircraft Rework—it appears to me that you have gone beyond the bare minimum, especially in the aircraft modification account.

The Navy budget for fiscal year 1987 contains $1.7B for aircraft modifications and $1.1B for aircraft rework. The fiscal year 1988 request for these two accounts is $669M and $1.0B, respectively. This means that the Modification account has been reduced by 52.2 percent and the Rework account by 16.7 percent.

Can naval aviation live with such major cuts in these critical areas?

Admiral DUNN. The projected request for modification procurement for fiscal year 1988 contained in the fiscal year 1987 Navy budget was $1.3B. The reduction of 49.4 percent to the Modification account was realized as a result of execution delays over the past two years due in part to congressionally mandated competitive procurement. Recent emergent requirements, i.e., the severity of the A-6 and E-2 wing cracks, have precipitated a shortfall in the fiscal year 1988/89 budget request. The Navy is presently staffing options to remedy this problem.

The aircraft depot rework budget for fiscal year 1987 and fiscal year 1988 in the fiscal year 1988 Navy budget is $1.2B and $1.08B, respectively. This represents a 10 percent decrease in funding from fiscal year 1987 to fiscal year 1988. This reduction was made possible primarily by hard scrubbing of requirements and incorporating anticipated economies and efficiencies into our requirements prior to submission. We believe these reductions represent a balanced program which naval aviation can live within.

AIRCRAFT SHORTFALL

Senator GLENN. Admiral Dunn, I understand that the Navy is in the process of changing the aircraft composition of the carrier air wing.

First of all, what impact, if any, does this change have on the aircraft shortfall projected by CBO for 1994?

Second, would you provide for the record why the Navy is changing the mix aircraft in the carrier air wing and what types of aircraft will be affected?

Admiral DUNN. The carrier air wing composition change does not have any impact on the aircraft shortfall projected by CBO for 1994. CBO used the same carrier air wing transition schedule that Navy did.

The Navy is changing their mix of aircraft to capitalize upon the increased multimission capabilities of the newer aircraft. The total number of aircraft in the air wing remains equal to the current "conventional" wing (86). The new wing—called the "Notional" wing—provides greater long range strike capability. The affected aircraft and difference in numbers are as follows:

	Conventional	Notional
F-14	24	20
F-18	24	20
A-6E	10	20
KA-6D	4	0
E-2	4	5
EA-6	4	5
S-3	10	10
SH-3	6	6
Total	86	86

AIRCREW RETENTION

Senator GLENN. Admiral Dunn, I know that pilot and Naval Flight Officer retention is a continuing challenge.

What are your latest retention rates and what is the Navy's plan to improve aviation officer retention?

Admiral DUNN. The most current retention rates for naval aviation, presented in terms of our minimum service requirement (MSR) methodology, are 46 percent for pilots and 74 percent for Naval Flight Officers for 1986. These numbers are projected to be 49 percent and 77 percent in 1987. At the request of Congress, Navy is currently working at the staff level with the Air Force to develop a common retention reporting methodology.

The Navy is working hard to improve aviator retention in order to reduce our midgrade pilot shortage which currently stands at some one thousand pilots. We have several ongoing programs as well as some new policies which I believe will be of assistance: Aviation Officer Continuation Pay (AOCP) continues to be our most significant aviator retention tool. Authority for AOCP currently expires in fiscal year 1987, and continued authority must be provided this year. Navy is requesting an enhancement for AOCP, which we believe will increase its attractiveness to our young pilots. Under the OP TEMPO/PERS TEMPO Reduction Program, 76 percent of Navy ships were able to achieve a 6 month deployed/12 month at home rotation last year. Navy is continuing our efforts at paperwork reduction to glean out all but the essential administrative workload. Our new Aviation Duty Officer (ADO) program offers pilots a cockpit intensive, alternative career path as an inducement to stay.

The Navy has several concerns for the future of aviation retention. Potential Officer Reduction in the face of a growing force structure will have a negative impact on retention. Fewer officers will be available to perform a higher workload. Also, Title IV DOD reorganization will force aviation career path changes. More time will, of necessity, be spent out of the cockpit. Increased staff requirements will be less attractive to young aviators, and will reduce the return on our substantial training investment.

A-6 PROGRAM

Senator GLENN. Admiral Dunn, it is my understanding that with the new airwing composition, the number of A-6E squadrons in the Navy and Marine Corps will increase from 19 active fleet squadrons in 1987 to 36 active and reserve squadrons by 1994.

I also understand that the follow-on A-6F will have different engines and completely different avionics from the A-6E aircraft. Assumedly, the ATA will be considerably different from both the A-6E and A-6F.

It looks to me like the Navy and Marine Corps will have to support three different types of all-weather attack aircraft, while at the same time dramatically increasing the number of squadrons.

My questions are:

a. Can the Navy adequately support three different types of aircraft while increasing the force structure?

b. Can the A-6E be upgraded to the A-6F configuration including engines?

c. If so, given the average age of A-6E fleet, would it be cost effective to do so?

Admiral DUNN. Yes, because there is a high degree of commonality the A-6F offers significant savings in support costs over the existing A-6E. Many of the major components in the A-6F such as the F-404 engines, multifunction displays, mission computers, and heads-up display will be common with other aircraft, reducing maintenance and supply support requirements. The Navy's strong commitment to commonality in the A-6F and follow-on attack aircraft will result in significant life cycle cost savings.

As far as an A-6E upgrade is concerned, an upgrade is possible; however, the F-404 engine planned for the A-6F will not fit into the existing A-6E engine cavity without some additional airframe modifications. The Navy is investigating several alternatives in order to achieve the most cost effective upgraded capability. The Navy plans to complete the upgrade effort in the near future to determine the most cost effective approach to meet future medium attack requirements.

Senator LEVIN. The committee stands adjourned.

[Whereupon, the committee was adjourned, to reconvene upon the call of the Chair.]

DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEARS 1988 AND 1989

TUESDAY, APRIL 7, 1987

U.S. SENATE, SUBCOMMITTEE ON CONVENTIONAL FORCES AND ALLIANCE DEFENSE, SUBCOMMITTEE ON PROJECTION FORCES AND REGIONAL DEFENSE, COMMITTEE ON ARMED SERVICES,
Washington, DC.

COSTS OF THE AIRCRAFT CARRIER REPLACEMENT

The subcommittee met in open session, pursuant to notice at 2:07 p.m., in room SR-222, Russell Senate Office Building, Senator Edward M. Kennedy (chairman), Subcommittee on Projection Forces and Regional Defense, presiding.

Present: Senators Kennedy, Nunn, Stennis, Levin, Dixon, Gore, Shelby, Warner, Thurmond, Cohen, Gramm, Symms and McCain.

Staff present: Arnold L. Punaro, staff director; Carl M. Smith, staff director for the minority; Romie L. Brownlee, deputy minority staff director; Kathryn E. Bognovitz, special assistant; George K. Johnson, Jr., Ronald P. Kelly, James R. Locher III, David S. Lyles, Norman G. Mosher, Gordon G. Riggle, Mark B. Robinson, Daniel J. Wildfong, professional staff members; Russell C. Miller, research assistant; Lori M. Jackson, staff assistant.

Also present: Gregory B. Craig and William J. Lynn, assistants to Senator Kennedy; Jeffrey B. Subko, assistant to Senator Exon; Gordon Kerr and Milton D. Beach, assistants to Senator Glenn; Charles C. Smith, assistant to Senator Dixon; Leon Fuerth, assistant to Senator Gore; Terrence Lynch, assistant to Senator Shelby; William J. Wight, assistant to Senator Warner; Dale F. Gerry, assistant to Senator Cohen; Henry D. Sokolski, assistant to Senator Quayle; Alan Ptak, assistant to Senator Gramm; and Patrick A. Putignano, assistant to Senator McCain.

OPENING STATEMENT OF SENATOR EDWARD M. KENNEDY, CHAIRMAN

Senator, KENNEDY [presiding]. We will come to order.

This afternoon, we will proceed with the second of the joint hearings on the Navy's proposal for the early replacement of two nuclear aircraft carriers. The Navy has revised its earlier plan to build two new carriers in 1994 and 1996, and is seeking funds to accelerate them instead to 1990 and 1993 at a cost of $674 million for a downpayment in the 1988 budget, $7 billion through 1993.

The new carrier replacement proposal is sudden, expensive, a controversial development. The extracurricular manner in which the proposal has surfaced raises serious doubts both as to its merits and its true purpose.

Until now, the Navy had submitted three successive 5-year shipbuilding plans. It made no mention of the new carriers before 1994.

Posture statements submitted to Congress by the Joint Chiefs including the one for this year are silent on the question of new carriers.

The proposal was not included in the internal DOD budget review for the 1988 and 1989 defense request.

As I said, the Navy circumvented the normal review process by taking the proposal straight to the Secretary of Defense last December after the regular review was largely completed.

Secretary Weinberger then approved these carriers over the opposition of Admiral Crowe, the Chairman of the Joint Chiefs of Staff.

This unusual procedure has blind-sided Congress, short-circuited DOD's own budget review process, and overridden the advice of our highest ranking military officer.

The question is why. The Navy has not claimed any sudden change in Soviet or any other threat that requires accelerated deployment of these carriers.

The Navy has not alleged that unexpected problems with present carriers require earlier procurement of new ones.

Even the problem of the blisters on the *Midway* were discovered after the decision was made on carrier replacement.

The primary justification offered by the Navy for this proposal is that $3 billion would be saved by earlier construction; but the saving estimates turn out to be dubious and inaccurate.

Seven hundred million dollars of the Navy's savings are attributed to inflation. Inflation simply reflects the fact that future dollars will be worth less than current dollars.

To judge true saving, a constant dollar comparison should be used. But the Navy ignored the fundamental economic principles.

The Navy also claimed savings from construction, but we are not talking about identical ships. The carriers in the mid-nineties have greater capability as a result of upgrades not included in the current plan; and the current plan involves a different acquisition strategy.

Obviously, to obtain valid estimates, of course, similar carriers must be compared. Costs that apply today cannot be validly compared with the cost of oranges tomorrow. And that means the Navy estimates are in question.

When these economic assumptions are removed, the Navy's $3 billion savings drops to $700 million, derived primarily from the heel-to-toe production of the carriers in the shipyard.

Even this figure is probably too high because it reflects worst-case assumptions about future jobs and layoffs of shipyard workers.

Thus the actual savings from the carriers are far less, probably by a factor of four or five, than the artificial savings on which Secretary Weinberger based his decision last November.

I hope witnesses from the Navy and from the GAO will be able to shed further light on the true cost savings of the earlier carrier replacement.

The second major issue in the hearing is the degree to which the Navy starved other programs to pay for earlier carrier replacement.

To accommodate the new carriers in the budget, the Navy has postponed at least $5 billion in spending for other Navy programs to the mid- and late 1990's.

Specifically, funds came from four principal sources: deferral of new ships—Navy has delayed construction of two destroyers and an amphibious ship; limitations of refit of older carriers—Navy has reduced the scope of the refitting for the carriers built in the 1950's and 1960's; cuts in readiness and sustainability—the Navy has reduced its planned buys of missiles, ammunition and spare parts; reductions in aircraft procurement—the Navy has diverted money intended to fix problems with a plan such as the A–6 bomber.

This hearing will explore the costs of taking money from each of these four areas to pay for the earlier modernization of the carrier force.

We must carefully assess the real cost of buying these carriers earlier than planned. In effect, to save $700 million in carrier replacement, it appears the Navy has jammed two new carriers into the current budget, and deferred more than $5 billion of high priority spending for defense.

So we are pleased to welcome as our first witness Frank Conahan, the Assistant Comptroller General for National Security and International Affairs of the General Accounting Office.

And after Mr. Conahan testifies and answers questions, we will hear from the two witnesses from the Navy, the Hon. Everett Pyatt, Assistant Secretary of the Navy for Shipbuilding and Logistics; and Rear Admiral Smith, Director of the Fiscal Management Division.

I will now ask if Senator Levin, who is co-chairing, has any statements or comments.

Senator **Levin**. I don't have an opening statement.

Senator **Kennedy**. Why don't we proceed

STATEMENT OF FRANK C. CONAHAN, ASSISTANT COMPTROLLER GENERAL FOR NATIONAL SECURITY AND INTERNATIONAL AFFAIRS, GENERAL ACCOUNTING OFFICE ACCOMPANIED BY MS. ALICE SPARGO

Mr. **Conahan**. Thank you, Mr. Chairman, and Members of the subcommittee.

I would like to proceed through my statement. It is a rather short statement, and I think we can get our points on the record.

As you stated, Mr. Chairman, the Navy does claim it would save $3 billion by buying the two carriers earlier than planned. And although other very important considerations such as affordability, force structure impacts, and industrial base needs should be considered in reaching a funding decision on the carriers, my statement today deals only with the relative cost to the Navy if the two carriers are bought as proposed.

The Navy's fiscal year 1988/1989 budget request contains $1.4 billion to begin advance procurement for the two new *Nimitz* class nuclear carriers, the CVN-74 and the CVN-75.

Full funding for these carriers would be requested in fiscal years 1990 and 1993 respectively.

The Navy estimates the total cost for the two carriers to be about $7 billion. The Navy estimates it would cost about $10 billion under the fiscal year 1987 plan to buy two new carriers with full funding in fiscal years 1994 and 1996.

The $3 billion savings fall into four categories: $1.1 billion is attributable to the acquisition strategy; $700 million, as you mentioned, Mr. Chairman, is attributable to inflation; another $700 million is attributable to production continuity; and finally, $500 million to configuration changes.

Based on our analysis, I believe that the only real savings would come from production continuity, estimated currently by the Navy at $700 million.

Let me deal with each of these four items for a moment.

A $1.1 billion estimated savings results from the Navy assuming a single ship procurement strategy for the fiscal years 1994 and 1996 carriers, and a multi-ship strategy for the fiscal years 1990 and 1993 carriers.

Approximately $700 million is associated with government furnished equipment, and $400 million for contractor furnished material.

A single ship strategy is more expensive for a number of reasons, including the fact that materials are bought separately for each ship, rather than being combined into economic order quantity buys under a multi-ship procurement.

A single ship strategy is inconsistent with the Navy's past procurement strategy for the CVNs 72 and 73, and with its currently proposed strategy for the CVNs 74 and 75

It would seem reasonable to assume that the same opportunities for a multi-ship procurement strategy would exist in the future as they do now.

If the two carriers were bought in the fiscal years 1994 and 1996, with a multi-ship procurement strategy, economic order quantity buying would occur, just as it would occur under the proposed procurement strategy.

Hence, it is inappropriate in our view to assert a savings based on comparing dissimilar strategies.

The Navy estimates inflation savings of about $700 million, using appropriate rates and conforming with the OSD/OMB guidelines. I associate my comments with your opening statement, Mr. Chairman, with respect to characterizing those as real savings.

Insofar as production continuity is concerned, planned construction for the two carriers in the proposed program is so-called heel-to-toe, not only with each other, but with construction of the CVN-73.

The Navy expects to realize economies and efficiencies from assumed increases in learning and from the series construction processes.

The Navy estimates that the savings attributable to maintaining production continuity are about $700 million. This figure includes

$300 million for reduced startup and nonrecurring costs, and $400 million for productivity savings by not interrupting carrier production at Newport News.

The Navy estimates that it will require an extra six million manhours if construction of the carriers is delayed until fiscal years 1994 and 1996.

I believe it's logical to assume that savings are possible through production continuity, but the precise magnitude of such savings is difficult to calculate because of the many variables that affect the outcome.

Some of these variables include the items mentioned above concerning the availability of workers with critical skills, and the maintenance of a sub-vendor base.

The Navy believes that if the carrier procurements are delayed to 1994 and 1996, it would be realistic to incorporate configuration changes resulting from technological advances occurring during the period.

The Navy said it could not precisely estimate what these changes would cost, and that the $500 million was a rough order of magnitude.

I would like to say a word about the advanced procurement profile in the Navy's current proposal. The Navy is requesting two years of advanced procurement funds for the CVN-74 and four years of advanced procurement funds for the CVN-75.

According to the Navy, this will allow it to take advantage of economic order quantities, and level out total obligational authority over a longer time period. The Navy has told us that nuclear propulsion equipment brought in fiscal years 1988, 1989 1990 and 1991 amounting to $1.3 billion can be used on other *Nimitz* class carriers, if the CVN-74 and/or the CVN-75 are not authorized in the years that they will be coming forward.

I think that we can explore this a little further in the question and answer period.

The Navy's request for advanced procurement also includes $1.2 billion for other equipment and materials. The equipment includes such items as the NATO Sea Sparrow missile system, radars, and the close-in weapons system.

These presumably could be used elsewhere in the fleet if the CVN-74 and the CVN-75 were not ultimately authorized.

The materials include some steel for both the CVN-74 and CVN-75. The Navy plans under its current schedule to begin prefabrication of the steel after the steel has been delivered. And after the steel has been prefabricated, it cannot be used for any other ship, according to the Navy people that we talked to.

Insofar as future cost avoidance is concerned, if the CVN-74 and CVN-75 are bought as proposed by the Navy they would enter the active fleet in fiscal years 1997 and 1999. Under the Navy's current acquisition strategy, the CVN-74 and CVN-75 are planned to replace carriers that will be 45 to 50 years old in fiscal years 1997 and 1999.

An analysis of the carrier force shows that the three oldest carriers at that time would be the *Midway, Saratoga* and *Forrestal.*

According to the Navy, if the new carriers are not available to replace the older ones, they will be faced with increased maintenance requirements and decreased operational capabilities.

To sustain the force level at 15 deployable carriers, without the new carriers, the Navy will be faced with maintaining some carriers beyond their extended service life of 45 years.

According to the Navy, if the carriers are to be retained for more than four years beyond that time, then some decision would have to be made with respect to doing either a comprehensive overall or additional service life extension programs. The latter, in my view, is not all that feasible.

These maintenance costs are further exacerbated by the difficulty of maintaining old machinery, and finding spare parts for equipment that may no longer be produced.

These same maintenance difficulties also diminish the operational capabilities of older carriers.

These concerns over future maintenance difficulties and diminished operational capabilities are pertinent only if the force level of 15 deployable carriers is to be maintained.

We will be happy to take any questions that you may have, Mr. Chairman.

[The prepared statement of Mr. Conahan follows:]

Prepared Statement of Frank Conahan, Assistant Comptroller General National Security and International Affairs Division

Mr. Chairman and Members of the subcommittee, I am pleased to appear before the subcommittee to discuss the Navy's request to begin buying two new aircraft carriers earlier than planned. The Navy claims it would save $3 billlion by buying them earlier. Although other very important considerations—such as affordability, force structure impacts and industrial base needs—must be taken into account in reaching a funding decision on the carriers, my statement deals only with the relative cost to the Navy if the two carriers are bought as proposed.

NAVY'S PROJECTED $3 BILLION SAVINGS

The Navy's fiscal year 1988/1989 budget request contains $1.4 billion to begin advance procurement for two new Nimitz class nuclear carriers—CVN-74 and CVN-75. Full funding for these carriers would be requested in fiscal years 1990 and 1993 respectively. The Navy estimates the total cost for the two carriers to be about $7 billion. The Navy estimates it would cost about $10 billion under the fiscal year 1987 plan to buy two new carriers with full funding in fiscal years 1994 and 1996.

The $3.0 billion in savings fall into four categories:

Category	*Millions*
Acquisition strategy (economic order quantity)	$1,100
Inflation	700
Production continuity	700
Configuration changes	500
Total savings	3,000

ACQUISITION STRATEGIES

A $1.1 billion estimated savings results from the Navy assuming a single ship procurement strategy for the fiscal years' 1994 and 1996 carriers and a multi-ship strategy for the fiscal years' 1990 and 1993 carriers. Approximately $700.0 million is associated with government furnished equipment (GFE) and $400.0 million is for contractor furnished material (CFM). A single ship acquisition strategy is more expensive because materials are bought separetely for each ship rather than being combined into economic order quantity buys under a multi-ship procurement. A single ship strategy is inconsistent with the Navy's past procurement strategy for CVNs 72 and 73 and with its proposed strategy for CVNs 74 and 75. It would seem reasonable to assume that the same opportuntities for a multi-ship procurement strategy would exist in the future as they do now. If the two carriers were bought in fiscal years 1994 and 1996 with a multi-ship procurement strategy, economic order quantity buying would occur just as it would occur under the proposed procurement strategy. Hence, it is inappropriate to assert a savings based on comparing dissimilar acquisition strategies.

INFLATION SAVINGS

The Navy estimates inflation savings of about $700 million using appropriate rates and conforming with OSM/OMB guidelines. This savings estimate is based on a single ship acquisition strategy in fiscal years 1994 and 1996. Inflation savings would be less than $700 milllion if the second ship was delivered earlier under a multi-ship strategy versus a single ship strategy.

PRODUCTION CONTINUITY

Planned construction for the two carriers in the proposed program is "heel-to-toe", not only with each other but with construction of CVN-73. The Navy expects to realize economies and efficiencies from an assumed 5 percent increase in learning from the series construction process, and by having a stable work force, an established sub-vendor base, and no start-up or non-recurring costs.

The Navy estimates that the savings attributable to maintaining production continuity are about $700 million. This figure includes $300 million for reduced start-up and nonrecurring costs and $400 million for productivity savings by not interrupting carrier production at Newport News. To determine productivity savings the Navy compared total production and engineering manhours between the two estimates. The Navy estimates it will require an extra 6 million manhours if construction of the carriers is delayed until fiscal years 1994 and 1996.

It is logical to assume that savings are possible through production continuity but the precise magnitude of such savings is difficult to calculate because of the many variables that affect the outcome. Some of these variables include the availability of workers with critical skills and the maintenance of a sub-vendor base.

FOREGONE CONFIGURATION SAVINGS

The Navy believes that if the carrier procurements are delayed to 1994 and 1996 that it would be realistic to incorporate configuration changes resulting from technological advances occurring during that period. Some of the changes would include (1) reducing the carrier's visibility on the enemy's radar, (2) using fiber-optic technology, and (3) self-protection improvements. The Navy said it could not precisely estimate what these changes would cost and that the $500 million was a rough order of magnitude.

ADVANCE PROCUREMENT PROFILE ANALYSIS

The Navy is requesting two years of advance procurement funds for CVN-74 and four years for advance procurement funds for CVN-75. According to the Navy this will allow it to take advantage of economic order quantities and level out total obligational authority over a longer time period. The Navy has told us that nuclear propulsion equipment bought in fiscal years 1988, 1989, 1990 and 1991, amounting to $1.3 billion, can be used on other *Nimitz* class carriers if CVN-74 and/or CVN-75 are not authorized.

The Navy's request for advance procurement also includes $1.2 billion for other equipment and materials. The equipment includes such items as the NATO Sea Sparrow Missile System, various radars, and the Close-in Weapons System. These presumably could be used elsewhere in the fleet. The materials include some steel for both the CVN-74 and CVN-75. The Navy plans to begin prefabrication after the steel is delivered and once the steel has been prefabricated it cannot be used for another ship.

FUTURE COST AVOIDANCE POTENTIAL

If CVN-74 and CVN-75 are brought as proposed by the Navy, they would enter the active fleet in fiscal years 1997 and 1999 respectively. Under the Navy's current acquisition strategy, CVN-74 and CVN-75 are planned to replace carriers that will be 45 to 50 years old in fiscal years 1997 and 1999. An analysis of the carrier force shows that the three oldest carriers at that time would be the *Midway, Saratoga* and *Forrestal*. According to the Navy if the new carriers are not available to replace the older ones, they will be faced with increased maintenance requirements and decreased operational capabilities.

To sustain the force level at 15 deployable carriers, without the new carriers, the Navy will be faced with maintaining some carriers beyond their extended service lives of 45 years. According to the Navy, if the carriers are to be retained for more than four years beyond that time then a decision would have to be made to do either comprehensive overhauls or additional service life extension programs. These maintenance costs are further exacerbated by the difficulty of maintaining old machinery and finding spare parts for equipment that may no longer be produced. These same maintenance difficulties also diminish the operational capabilities of the older carriers.

These concerns over future maintenance difficulties and diminished operational capabilities are pertinent only if the force level of 15 deployable carriers is to be maintained.

Mr. Chairman this concludes my prepared remarks and I would be pleased to respond to any questions you might have.

Senator KENNEDY. Thank you very much. I think it's an excellent statement. And you've addressed the principal concerns on this.

But let me just go over them briefly. I'll ask the staff to make sure we follow the 6-minute rule.

In your written statement you talk about the four categories that contributed to the cost savings, the acquisition strategy, inflation, production continuity and configuration.

Setting aside the inflation for a moment, the only one of the three, that being production continuity, should be considered in making a valid comparison of the two alternative carrier replacement programs.

PRODUCTION CONTINUITY SAVINGS

And of the three categories other than inflation, do you agree that the production continuity savings is the only valid category of the Navy's cost estimates?

Mr. CONAHAN. Yes, sir. I agree with that assessment.

Senator KENNEDY. Does that mean you'd dismiss the $1.6 billion of the Navy's projected $3 billion?

Mr. CONAHAN. I guess where I come out on that, is that if we could all agree that were the carriers approved in the 1994–1996 timeframe, they would be approved on a single ship procurement strategy, then we would begin to have to give some consideration to a savings as contrasted with the current proposal, which is a multi-ship strategy.

Our point is that in the CVN–72 and the CVN–73, we had a multi-ship strategy. The current proposal to go forward now is a multi-ship strategy.

And I expect that we all would come out agreeing to a multi-ship strategy a few years down the road, if indeed, we agree to go forward with the program. And therefore that gets wiped out.

The configuration changes, if indeed we do have improved technological advancements, that's a value to be received, and there would be a value for that at that time.

Inflation is simply a different value for money at a future time.

Senator KENNEDY. Let's focus on the production continuity. The Navy estimated that would be $700 million.

Can you tell us how the Navy calculated those savings?

Mr. CONAHAN. The Navy attributed $300 million of that to reduced startup costs and nonrecurring costs. They felt that those costs could be avoided if we had a program continuing from the current CVN-73 program, and with the CVN-74 and CVN-75 following right on.

They also believe that production savings, because of uninterrupted work at the Newport News yard would result in savings of about $400 million.

We've not validated those, but I think that it's reasonable that those kinds of savings would be achieved.

Senator KENNEDY. What is the optimum point for starting the earlier carrier replacement? And has that time gone by?

Mr. CONAHAN. I think in terms of optimum, it may have gone by by about a year or so.

Senator KENNEDY. Well, then, do you have a recommendation as to what figure in production continuity that you'd recommend the committee use in terms of its evaluation?

Mr. CONAHAN. No, I don't have anything better than the numbers right here. We've not done a complete scrub of those numbers.

I think that they're ballpark numbers, and I don't know that we would get a much better number at this point, even with a lot of additional analysis.

Senator KENNEDY. Let me go to the discount rate. I guess that's a factor that's considered, is it not, in terms of the real savings? If inflation savings are to be included in the subcommittee's financial analysis, they should be considered only in the larger context of the time value of money.

In this regard the two alternative carrier replacement programs have different flows of outlays and different inflation costs.

It's useful to have an understanding of the present value of these different streams of outlay expenditures. If you were asked to calculate the present value of these different outlay streams, what discount rate do you use?

Mr. CONAHAN. We would use an interest rate I believe of about 7.6 percent currently.

Senator KENNEDY. What's the rationale for that?

Mr. CONAHAN. That is the interest rate for the period of time over which the outlays are going to occur. It's the best estimate that we can come up with.

Senator KENNEDY. And is that the same as the executive branch?

Mr. CONAHAN. It's the rate on outstanding government securities. Yes, sir.

Senator KENNEDY. That's the same as the executive branch?

Mr. CONAHAN. Yes, sir. Oh, no, sir, that is incorrect, OMB uses the 10 percent. This is a GAO number, the 7.6 percent. It is on our outstanding securities.

Senator KENNEDY. And that's the one you recommend that we use?

Mr. CONAHAN. Yes, sir.

NEWPORT NEWS SHIPYARD

Senator KENNEDY. Given that the Newport News Shipyard is the only one that's capable of building the nuclear powered carriers at the time, how valid are the Navy's concerns about workforce ability at the yard?

Mr. **Conahan**. I think that there would be an impact if the schedule of the carrier were changed one way or the other.

The number of workers associated with the submarine is considerably fewer than the number of workers associated with the carrier. I think that if the carrier is not approved at this time, we could expect a downturn in employment at the shipyard.

There will continue to be a workforce, of course, because of the other work ongoing, but there would be some downturn.

Senator **Kennedy**. Let me just ask one final question. It appears that the valid comparisons that the subcommittee could make of the alternative carrier would be to include two of the four categories that you mentioned earlier in your presentation; inflation, and production continuity; and to calculate the present of the different outlay streams.

Do you agree with that?

Mr. **Conahan**. I don't know that I would include inflation in that. And I think we would have to take a close look at the production continuity number.

Most of those would be up front and not far down into the stream of the program.

Senator **Kennedy**. I'll hopefully come back, but my time is up. Senator Cohen.

Senator **Cohen**. I will pass for the moment.

Senator **Kennedy**. Senator Thurmond.

Senator **Thurmond**. Thank you, Mr. Chairman.

PRODUCTION CONTINUITY SAVINGS

Mr. Conahan, in you formal statement, you referred to estimates of production continuity savings of $700 million between the two acquisition strategies.

What was the basis for this comparison?

Mr. **Conahan**. There are two components of that. It's made up of an estimate of $300 million for reduced startup and nonrecurring costs, and an estimate of $400 million for productivity savings by not interrupting production at the Newport News yard.

These are Navy estimates, and we have not validated them, but we don't take an awful lot of issue with them.

With respect to the second one, the productivity issue, the Navy estimated that if we had a break, we would require an additional 6 million hours of labor.

Senator **Thurmond**. Was it an independent Navy estimate?

Mr. **Conahan**. It was a Navy estimate, yes, sir.

Senator **Thurmond**. Independent Navy estimate?

Mr. **Conahan**. It was in the Naval Sea Systems Command.

Senator **Thurmond**. Was the same cost estimating model used in both cases?

Mr. **Conahan**. There were some different assumptions used as between the $7 billion estimate and the $10 billion estimate, but I think that they use the appropriate estimating technologies, and apply the correct factors.

That was beyond the fundamental assumption of a single ship versus a multi-ship buy in the outyears.

Senator THURMOND. Thank you. I have a question for Secretary Pyatt, if you don't mind. I have to go to another committee.

Senator KENNEDY. Secretary Pyatt, would you come forward, please.

LONG-RANGE CARRIER REPLACEMENT PROGRAM

Senator THURMOND. I believe in your statement you referred to the Navy's long range carrier replacement program, did you not?

Mr. PYATT. Yes, sir.

Senator THURMOND. And six of our existing carriers having to serve 50 or more years to sustain this 15 deployable carrier force level.

Mr. PYATT. Yes, sir.

Senator THURMOND. What is the Navy's long range replacement program.

Mr. PYATT. Well, basically, this is the first step of it. Then following in the future we would, to maintain 15 carriers, we would have to come back for a carrier about once every three years.

Senator THURMOND. If the two present requested carriers are authorized, when will the Navy be requesting the next carrier?

Mr. PYATT. I believe that is subject to a future administration and a future Congress; but it should be about 1996.

Senator THURMOND. And coming from you, just for the record, what would be the savings in building both of the carriers?

Mr. PYATT. Well, as I will get into when I get to my statement, the amount of money that you save on building the carriers somewhat depends on the assumptions that you make, as the GAO has just outlined.

I think $700 million is a minimum savings. I believe that our record in shipbuilding savings, and the money that we have returned in this process shows that it will be substantially more than that.

I believe, for example, that it is inappropriate to prejudge future Congresses, and assume that they would approve a two-carrier program, because that is a special action. Getting a carrier approved is a long process.

We've even had periods where they've been rescinded. So jumping to a conclusion that a future program would be a two carrier program I believe prejudges a lot.

I think that the $1.1 billion that's in there for the multi-carrier program is in fact a real savings that this Congress can take advantage of.

Senator THURMOND. You say $1 billion in real savings in your opinion?

Mr. PYATT. Yes, sir. But again, it is a very legitimate point of debate about the assumptions that you make. Mr. Conahan outlined it accurately.

Senator THURMOND. But you think the minimum would be $700 million?

Mr. **Pyatt**. Yes, sir. Now, $700 million is a cruiser, or submarine, or 6 oilers. That's just to help understand. It's not a small amount of money.

It is a significant savings to be concerned about.

Senator **Thurmond**. Now, for the record, you feel we need these ships at once?

Mr. **Pyatt**. I think once the decision is made——

Senator **Thurmond**. Well, by the time they're built?

Mr. **Pyatt**. Yes, sir. The prior testimony by Mr. Lehman I think outlined the logic behind the carriers, the need that by the time that these carriers would be finished that they would in fact replace the *Midway*, which would be 52 years old, and one of the *Forrestal* class carriers, which would be well over 45.

Senator **Thurmond**. Now, from the standpoint of national defense, is this the best way we could spend the cost of these ships instead of doing something else?

Mr. **Pyatt**. That was a point of debate that we went through with Mr. Weinberger for about the last three months of the year, before the budget was prepared; and we wound up agreeing that, yes, it was.

During our budget review process, and we'll testify more about this later, we identified savings in the Navy ship, in the Navy overall Navy program that we thought were lower priority than these carriers, and therefore made the proposal to the Secretary of Defense to make this adjustment.

Senator **Thurmond**. So Secretary Weinberger and the Navy both concluded that this would be the best investment for the cost of these ships to put it in these particular ships?

Mr. **Pyatt**. Yes, sir. Otherwise, it wouldn't be in the budget.

Senator **Thurmond**. Thank you, Mr. Chairman.

Senator **Kennedy**. Senator Stennis?

Senator **Stennis**. Mr. Chairman, I appreciate the courtesies of the occasion from you. I was not aware that we were going to have a hearing today on this matter. But by habit, I came around. I've followed the carriers—and not that I know a great deal about this from a military standpoint or otherwise—but I've followed these carriers through this room and by this table and on down into the shipyards and finally out into the ocean.

And I don't know how many times I have known that in trouble spots that show up—it makes no difference which side of the world they're on—the next morning a carrier shows up there. And the atmosphere starts changing as soon as daylight comes. Things get better for our side. I didn't read that in a book. I didn't imagine that. I felt it, felt it myself, over and over and over.

And I'm pretty tight with money. I don't want to see any money wasted or thrown away, and carriers do cost a good deal of money. But I just came on around here automatically because of this little background observation, experience, that I've had. And the opposition is very good faith, like these people here today. They have a right to be here.

It seems to me that the best delivery job for the carriers is turning the tides in our favor and against the other. They are capable of doing the job and have a psychological advantage too—with all the mighty good airmen and seamen and everything else that goes with it.

And all in all, even though the carriers cost a good deal of money, they're worth that money in this time, with conditions that we're up against.

I never tried to play up a scare or anything like that, but as trouble increased and conditions got bad in many places, on down to even while Mr. Reagan has been President there was occasion when we'd have to bring out the carriers to the trouble spots.

So I'm totally sold on the idea. And if the best naval minds think that the better part of caution and the better part of preparedness is to go on and having these two carriers, even if it does come to the borderline or run over just a little what you must have, I'm going to support these carriers.

We don't make any in Mississippi, unfortunately. But I know when they are made and they're made right. Since I've been on the committee, I haven't heard anything coming up wrong on a carrier—nothing misbuilt.

So it's natural for me to be here, and I thank you very much for your courtesies Mr. Chairman. I'll just stay and hear it all if I may.

Senator WARNER. Mr. Chairman, could we express our appreciation for the statements of wisdom and experience just given by our distinguished colleague?

We thank you, Mr. Senator.

Senator KENNEDY. The Senator from Arizona.

Senator MCCAIN. Thank you, Mr. Chairman.

There is very little that I can really add to the very important words just made by our distinguished colleague from Mississippi, who certainly has a degree of knowledge and experience that very few of us are privileged to have.

So with some hesitation, I pursue the issue. And I would just like to point out a couple of aspects of the report before us, and that is as follows:

$700 MILLION SAVINGS

Mr. Conahan, would you agree that $700 million would be saved with a double ship acquisition as opposed to a single ship? Is that correct?

Mr. CONAHAN. I think a number in that ballpark, yes, sir.

Senator MCCAIN. Roughly that.

I do take some exception to your statement about inflation not being a factor, because it's the same value of money at a later time.

I think if you asked the average housewife if she'd like to have a refrigerator, buy it now at a lower price, and a couple of years later at a higher price, I think she'd prefer to acquire it at this time.

And whenever we can—particularly if it appears that we can anticipate an increase in inflation in this country, unfortunately, it might be a factor that we should consider when we calculate the cost of these aircraft carriers.

In fact it might be helpful to this committee to have one of the shipbuilders testify before this committee who has had their production line disrupted due to various changes in the budget process. They should explain to this committee the enormous challenges that it gives a shipbuilder when they have lost the skilled personnel in ship construction.

And it's very clear from past experience when they lose their jobs they leave the area naturally to get jobs in a different line of work or place, and to retrain people with those kinds of unique capabilities is a very crucial area, and I hope that you will have time to look at that a little more carefully.

I also would just like to point out again another fact here, and that is, that these ships they're replacing are very old. We had testimony from Admiral Dunn earlier who talked about the problems that they're presently experiencing with the U.S.S. *Midway*.

The ship is experiencing a rolling problem. There is required to be 150 additional men in the engineering spaces because of the older equipment that requires larger numbers of personnel to maintain it. And that certainly is a significant factor.

It also affects, the retention and the cost to the taxpayers to keep qualified men and women in the service, particularly when we deploy these older, un-air-conditioned ships into areas like the Persian Gulf and the Middle East.

But I would suggest, Mr. Chairman, that the argument here is not so much as to cost savings, because I think those are very clear.

I think the argument and the debate on this issue should really be focussed on whether we need 15 deployable carriers or not. And if we don't need those 15 deployable carriers, I think it would be very clear that we should not expend this enormous amount of money on two additional carriers.

The case, I think, is being made more and more each day that perhaps we may need to maintain a Persian Gulf presence. You might note that the administration just made a decision to beef up our forces in the Persian Gulf.

Whether that is a requirement or not I think is a subject for a different debate. But there's no doubt a different requirement has been placed on the United States Navy in the Persian Gulf.

I note with interest the continuing negotiations between the United States and the Spanish government over the Torrejon Air Force Base where it's pretty clear that the F-16s will be removed, depriving us and NATO of a tactical aircraft capability.

The recent activities between Greece and Turkey where the Prime Minister of Greece decides that he would shut down a U.S. base in Greece.

And previous testimony as to the fragility, or the lack of capability that we might have to maintain permanent bases in the Middle East anywhere but Israel is certainly a dicey proposition at best.

So I would hope, Mr. Chairman, that we could not only focus this debate on cost comparisons which are sometimes in the eye of the beholder, but in the area of whether 15 aircraft carriers will be required to maintain this country's national security interests.

I appreciate the input of Mr. Conahan and Ms. Spargo on this issue, and I look forward to hearing from Secretary Pyatt.

Thank you, Mr. Chairman.

Senator KENNEDY. Thank you.

I will recognize the Senator from Michigan. I think you'd have inflators, in other materials that have been deferred in the purchasing.

I don't think our debate is about buying them, but on the question of timing.

The Senator from Michigan.

Senator LEVIN. Thank you, Mr. Chairman.

The issue here is not whether we want a 15-carrier Navy. The issue is whether or not we buy them with long lead this year, or whether we buy them as originally planned in 1994 and 1996, I believe.

So I couldn't agree with my friend from Mississippi more; these carriers perform a very useful function. And I think his eloquent statement is indeed just that, an important statement about the usefulness of aircraft carriers.

But that's not the issue. The issue we have to face is whether we accelerate buying two carriers to this year instead of buying them as originally planned; either way, we'll have a 15-carrier Navy.

It is important that we keep our eye on the importance of the carrier, but we also have to look at what is the best way to buy them in terms of saving dollars for other important programs.

That's where your testimony, it seems to me, is so valuable. Have you checked your figures with the Navy? Would they agree to your break-down of the $3 billion alleged savings?

Mr. CONAHAN. Yes, indeed, Senator Levin; they are the Navy's numbers to begin with.

Senator LEVIN. So they will not be arguing that production continuity is a $700 million saving, and buying two instead of one is a billion-one and so forth?

Mr. CONAHAN. No, I think not. I don't think there's an argument there.

There might be an argument as to whether our observation on the feasibility of multi-ship buy in 1994 and 1996 is where the Congress would end up.

Senator LEVIN. But we don't know where the Congress is going to end up this year.

Mr. CONAHAN. I think the important point of our testimony is twofold. Number one, what we believe the savings will be; and number two, what the Navy plan portends for the future, which is something we really haven't gotten to.

I think it's important to recognize that if, indeed, this Congress authorizes the advanced procurement that is requested in the fiscal 1988 and 1989 bill, that portends a significant commitment in terms of the total carrier program.

Senator LEVIN. Do you know whether, from talking to the Navy, they assume that the Congress would authorize two carriers this year more than they would assume we would authorize two carriers in 1994?

Do they think it's more likely we would do it now than later?

Mr. CONAHAN. No, I don't have a comment on that.

Senator LEVIN. Okay, you've given us a breakdown on some of the savings which are claimed. You've gone into some of the nuclear propulsion equipment. You've indicated that that could be used for other ships if we don't authorize these two ships in later years.

You've indicated that some of the advance procurement dollars for the Sparrow missile system, the radars, the close-in weapons systems, could also be used on other ships.

Then you've testified that the materials also include some steel which could not be used on other ships.

Can you tell us what proportion of the long lead money could be used for other ships, and what proportion of it could not be used for other ships, if we put the long lead in but then did not authorize these two carriers in the later years?

NUCLEAR PROPULSION EQUIPMENT

Mr. CONAHAN. Yes, sir. Let me start with the nuclear propulsion equipment. You will note on the first ship they are asking for $644 million for long lead procurement of nuclear propulsion equipment.

That essentially is the reactor we're talking about, the vessel, the core, the heat exchanger, and all of the rest of the things that go into the primary propulsion system.

We understand that that could be used on other *Nimitz* class carriers if the CVN-74 and CVN-75 are not authorized ultimately. Now, when you take a look at that package, it's further my understanding that when you refuel a carrier, you use primarily a replacement of the core, and not necessarily the vessel and the heat exchanger and the control system and all the rest of that.

And about one-third of the cost of the propulsion, the primary propulsion system, that is being asked advanced procurement for, is the core. So that for these two systems that they're asking for, two-thirds of it, the use of that elsewhere in the fleet on *Nimitz* class carriers, is not as likely as the core.

So I think that that needs much further analysis before one could come to a final conclusion of what we have there.

Senator LEVIN. But about a third of it is surely compatible with other ships; two-thirds of the $600 million might or might not be.

Mr. CONAHAN. Right. We know that the *Nimitz* and others are coming on for refueling somewhere down the road.

Senator LEVIN. Give us just your ballpark estimate of the balance of the long lead; what percent.

Mr. CONAHAN. A very small part of it is for the NATO Sea Sparrow missile sea system, and things like that. Something on the order of $200 million that clearly could be used elsewhere.

About $500 million requested of the amount requested for the CVN-74 in fiscal year 1989 is for steel. Now presumably, there would be authorization in fiscal year 1990 to go forward with that before they prefab that.

But to the extent they began prefabrication, that presumably could not be used.

Now on the later carrier, the CVN-75, about $250 million of the advanced funding in fiscal year 1991 is for steel, and they plan to begin prefabrication of that at the end of 1991 or early 1992, and don't plan, under the proposed program to come forward for full funding for the balance of that carrier until 1993.

So I would say a substantial amount.

Senator LEVIN. When you have concluded that only $700 million of the $3 billion are real savings, are you using the normal GAO terminology as to what constitutes real savings?

Mr. CONAHAN. Well, I think that what we need to do is to take the four categories and discuss each separately.

Senator LEVIN. Is this the way the GAO generally categorizes things? Is this a standard pattern that you've applied here, or is this something new for you?

Mr. CONAHAN. Well, I think that you've got to take a look at each one on its own merits, and that's what we have here.

There was a fundamental change in the assumptions between their current proposal and the proposal to buy them in 1994 and 1996.

And our position is that based on the CVN-72, 73 buy, their proposal for the CVN-74 and CVN-75 to go forward now, it's likely that we would have a similar kind of buy in the future.

Senator LEVIN. Thank you. My time is up.

Senator KENNEDY. The Senator from Maine.

Senator COHEN. Thank you, Mr. Chairman.

I think the issue is, really, whether or not we want a 15-carrier group. This issue has been debated for some time now, but I recall testimony before the committee suggesting that we ought to have land-based tactical air.

The question became, where do we put them in the Middle East. Someone suggested that Saudi Arabia was a real stable country that we could count on to have the aircraft based, or we could fly them from CONUS, perhaps put them up at Loring Air Force Base. I'm sure that would be very acceptable to my constituents.

I had some reporter ask me after the highway bill vote the other day whether we were getting aircraft carriers in Maine. Was that the tradeoff.

I said, no, I hadn't thought about it. It would have been a good one, had I taken it into account.

But I don't have any interest in building aircraft carriers in Maine for one reason, we can't fit them in Maine. But I'd like to take them away from the Senator from Virginia any time.

I think there is a debate going on in this country. Do we need to have 15 aircraft carriers or battle groups? A lot of people think they are floating coffins, not to be relied on in a time of contemporary or modern warfare.

It is an issue that is being debated if not in this committee, certainly at other levels.

The first question we have is, do we need them? I think the clear cut answer is yes, we need them.

Next question: Can we afford them? That's precisely why you're here to tell us that in fact we can save $700 million if we go ahead this year as opposed to several years down the road, is that not correct?

Mr. CONAHAN. I think I'm here to say two things. Number one, that I believe there is a savings achievable if you go now instead of a few years down the road.

And secondly, there is some risk associated with that, and we need to take into account that risk.

Senator COHEN. Risk associated with what?

Mr. CONAHAN. The risk associated with spending money now that, if the Congress does not agree to go along with the carriers in fiscal years 1990 and 1993, may not result in value to the United States.

15-CARRIER BATTLE GROUPS

Senator COHEN. In other words, if a future Congress were to say we don't need the carriers any more, then it would be a waste of money?

Mr. CONAHAN. It seems to me that if we buy into the plan that the Navy puts before us, if you folks buy into the plan that the Navy puts before you, you're buying into the two carriers, because the amount of advance procurement under this plan is substantial.

Senator COHEN. Wait, stop right there. We're buying into that program. You've heard everybody on the committee say we want 15 carriers.

Mr. CONAHAN. I mean, in this fiscal year, in the fiscal year 1988, 1989 authorization.

Senator COHEN. That's not the critical distinction as to this year or next year.

The question is, as a matter of policy, do we want to maintain 15-carrier battle groups. That's the issue before the Congress and the committee. I gather from the testimony or the comments coming from the Senators, that it is clear that we want to maintain that. We want to have 15.

It's not an issue as to whether we're trying to prejudge down the line. I think that we're saying right now that we want to have 15, and that the only question then is, is now the time to do it or is it better to postpone it to next year or the year thereafter, and what are the risks in doing that?

The risks in doing that are, as Senator McCain has said, possibly more inflation—almost assuredly more inflation—and reduced savings; is that not true?

Mr. CONAHAN. I would say, if the decision has been made to go ahead with the carriers, we will save as much as $700 million by going with the Navy's plan now versus the later plan.

Senator COHEN. So if we were to defer this request for 2 years or 3 years and make it in 1990 or 1991, all we're going to do is lose money in terms of these savings?

Mr. CONAHAN. The $700 million, yes, sir.

Senator COHEN. At least that amount?

I was concerned about this because, number one, I hear the question about—this is the Force Projection Subcommittee that we're talking about right now—how do we project forces?

We don't project them on submarines. It's a great weapons system, but you don't project force on a submarine. You can't carry personnel on a submarine.

You don't project forces by having them stationed at Loring Air Force Base either, as much as I'd like to have some new aircraft up there to replace the old B-52s. We don't project forces in that fashion.

It seems to me that the aircraft carrier does, in fact, carry out that particular mission. It doesn't put Margaret Thatcher in the position of having to incur the wrath of her voters, or put us in the embarrassing position of having to deal with the French who refuse to allow U.S. flights over their airspace to carry out a necessary mission.

I don't think it's a question of whether we need the 15 carriers. That is an issue that should not be a matter of debate in this committee. The only question really is, how much are we going to save by going ahead this year as opposed to next?

I think you brought this up on page 5 of your statement when you point out that the concerns over future maintenance difficulties and diminished operational capabilities are pertinent only if the force level of 15 deployable carriers is to be maintained.

You raise that issue in my own mind. In other words, the Navy has told you, in essence, that if we don't get the 15 carriers and don't get the long lead, we've got a real problem with *Kitty Hawk* and others in terms of the SLEP program, and extending their life beyond 45 years. That is a real problem, is it not, very costly?

Mr. CONAHAN. Yes, I quite agree.

Senator COHEN. And then you raise the issue, these concerns over future maintenance difficulties and diminished operational capabilities are pertinent only if we're going to have 15.

So you're leaving it open. If we're not going to have 15, that's not a cost to be concerned about.

Mr. CONAHAN. Well, I guess I would take the entire statement. I started out my statement by saying that it deals only with the relative costs to the Navy if the two carriers are bought as proposed.

And the purpose of the statement that you just read is to understand that that is in the context of a 15-carrier force.

Senator COHEN. That's all I have, Mr. Chairman. I think it is important to point out that according to the GAO, a minimum of $700 million would be saved.

That's not a small amount of money.

Senator KENNEDY. The Senator from Illinois.

Senator DIXON. Well, Mr. Chairman, first of all, may I have consent to place this statement in the record.

Senator KENNEDY. It will be included in the record.

[The prepared statement of Senator Dixon follows:]

PREPARED STATEMENT OF SENATOR ALAN J. DIXON

Mr. Chairman, this afternoon will be the third hearing the joint subcommittees have had on the costs of the aircraft carrier replacement program.

I have stated before to my fellow members that I am deeply concerned whether the United States Armed Forces can continue to operate and maintain all the weapons systems and facilities vital to our national defense. There is no doubt that all of our subcommittees face hard choices as we mark up the Defense Authorization bill for fiscal year 1988 and 1989. I think that we must avoid the feast and famine funding of proven weapon systems.

We do not need quick fixes, as seen in the proposed stretchouts recommended by the services, nor do we need more slashes of unglamorous accounts such as ammunition and spare parts. This joint subcommittee must take a very close look at the cost of the two new carriers and whether we need to maintain 15 carrier battle groups. Now is the time for us to begin the careful matching of our military forces with achievable and realistic defense budgets.

Thank you, Mr. Chairman.

Senator DIXON. Beyond that, Mr. Chairman, I've heard some fine statements in the room. I'm sorry I missed some of them.

I apologize for being on the Senate floor for a moment on the pending legislation before coming here.

But as Chairman of the Subcommittee on Readiness, Sustainability and Support, I think there's an overriding issue here, the question of priorities that we have to take into consideration when we talk about these carriers, whether you support the question as it was placed to us by the Senator from Maine about whether you want a 15-carrier force or not, I think you have the question of what's available for us this year.

I think it's very, very clear that if we got zero real growth, that would be a tremendous victory for those of us in this committee, and I doubt that that will be the result of a conference between the two Houses, Mr. Chairman. I doubt that we'd have a figure that high.

The hearings I've held in my subcommittee show that for about the last 5 years, the charts have been going up on spare parts, ammunition, depot maintenance, real property maintenance.

Those same charts show everything going down for the next 5 years, to where we end up in 1991 about where we were in 1983.

I think that when we talk about deadlines, questions of salary increases and things of that character, we're going to find that a lot of these things we'd like to do we can't afford to do.

I think that may be the paramount question when we address this issue here in this committee ultimately, in the subcommittee, finally in the committee, and certainly on the floor of the Senate.

And because of my reservations about that, I'd have to say that everything I hear in this connection will be viewed from the context of the overall budgetary impact and fiscal constraints that we'll face as members of this committee and as members of the Senate.

Senator KENNEDY. The Senator makes a valid point. Does he care to inquire of any of our current panel here?

Senator DIXON. No. I think the answer is a fairly obvious one, Mr. Chairman. We wait until we look at the bogeys in the subcommittees, and ultimately, address it in the committee.

Senator KENNEDY. The witnesses will be able to see that there are a lot of people who want to speak on these issues and have something to say.

I think the Senator from Texas was missed under the early-bird rule.

Senator SYMMS. Would the Senator yield for one question?

Senator GRAMM. I will be happy to yield.

AGE OF "MIDWAY"

Senator SYMMS. I wanted to ask a question about the age of the *Midway*, and what is the next carrier that is the oldest? At what point do we have a carrier out there that is truly unsafe and not seaworthy.

Mr. CONAHAN. I think, Senator, that I would leave the second part of your question for the Navy representative. But I can give you the ages of the carriers.

I think that the *Midway* approaches 52 years, when the first of the new carriers comes on line in 1997, and the *Forrestal* in 1997 would be—the *Midway* would be 52 years, the *Forrestal* would be 44 years, and the *Saratoga* would be 43 years old.

So they are old carriers.

Senator SYMMS. I yield back to Senator Gramm, and appreciate his generosity. Thank you very much.

STEEL PRODUCERS IN TEXAS

Senator GRAMM. I would like to ask you a question. I have a lot of steel producers in Texas who long ago have gotten out of the slab building business but are in the fabrication business, and they've been hit hard by voluntary restraints on imports.

In fact, the cost of slab steel to some of these users has risen by 30 percent in the last 12 months. I'd like to ask you to provide for the record an estimate by the GAO on how much money we would save if we allowed these carriers to be built with imported steel; what the differential would be on the buy-American provision; and based on our experience of the last year with voluntary restraint, at least give us some ballpark figures about what might happen in the future, given actions by Congress to further limit imports of steel in terms of the costs of these two new carriers.

Let me repeat it.

How much money could be saved if we went into the open market and bought this steel rather than buying American?

Number two, given the experience with voluntary restraint in the last 12 months, can we make any projections about what may happen under that program in the future?

And I'd at least like some kind of ballpark figures about potential impact on the cost of these two ships, with additional restrictions on steel imports as contemplated in the House trade bill and the Senate trade bill.

Mr. CONAHAN. Senator, I'm sure that we can do the first part and the third part without too much difficulty. Predicting what the future might look like in terms of our experience with voluntary restraints orders is something that might be a little longer term.

Senator GRAMM. I just think it would be useful if you just made, you know, you make all kinds of assumptions. What I'm looking for here is some kind of ballpark figure that really ties all this together.

My guess is we're talking about tremendous amounts of money.

Mr. CONAHAN. I think we are too, and we can provide that for you.

GAO will provide a response to Senator Gramm under separate cover at a later date. His questions require that we do some additional analysis which cannot be completed by the due date (4/24/87) for his transcript.

[Insert will be retained in committee files.]

Senator GRAMM. I appreciate that.

Well, Mr. Chairman, I was very much swayed and stirred by Senator Stennis' statement. I hate to embark on building two more carriers, not knowing where the money is going to come from.

And as is usually the case, if you look at the outlay path, boy, they're cheap to start. $6.4 billion. And they're expensive to complete, getting up to over a billion a year for 3 years running.

On the other hand, as I look at these figures that show us dropping down to 12 carriers by the turn of the century if we don't do something, I guess I go back to Senator Stennis' statement, and that is, when Ivan is at the gate, the first thing we call on to push him back is the carrier.

But I think it ought to at least give us some food for thought in looking at this outlay pattern, where that money is coming from; because that's got to fit in with the pattern of the new attack submarine, the advance technology bomber, the advanced technology fighter, and a whole range of weapons that we all know we need.

And again, I think it's simply—puts pressure on the committee to try to make decisions not just based on the first year or two, in fact, committing to the carriers with the kind of figures we use don't really cost anything the first two years.

It's when the bills start coming due in the next three years that we really start paying the cost. And I guess this is the kind of decision that while it's nice to have GAO's estimates, and they're very valuable, and you perform a great service, ultimately, we've got to decide, based on what each member thinks our budget resources are going to be and what the alternatives are, whether we can really afford it.

I don't have any doubt that with the President's budget, I want these two carriers. I just don't know what the budget we ultimately adopt in the Congress is going to be, and where these carriers fit within that budget; and second, whether anybody has ever factored in this big, long string of outlays into the future into trying to get these budgets to make sense three, four, five, six, ten years from now.

And obviously, that's what we're here for, and I appreciate your input.

Senator LEVIN [presiding]. Thank you, Senator Gramm.

Senator Nunn.

Chairman NUNN. Mr. Chairman, we have a vote on. I would like to underscore the point Senator Gramm just made.

I think that we've got tough decisions, and we're all acting like we don't. The carrier is just one of them. We've got others too.

We're acting as if we're going to have 3 to 5 percent growth from now on. The Navy is acting as if it's going to have that growth from now on.

That's the only way they can possibly project that you can man these ships, not just carriers. If somebody thinks we're going to do that, then I think all of this discussion is probably irrelevant.

But I can't find anybody around here who believes that's going to happen. We're talking about this year, budget committees on both the House and Senate side are going well below zero.

If we have an all-out floor fight and to get the number back up to zero, we're going to be lucky. That would be the high water mark.

So we're not talking about the President's budget, unfortunately.

I'd just like to ask a question of Mr. Conahan. Have you done any kind of comprehensive profile along the lines Senator Gramm is talking about on the outyears and what those bow waves are going to be in terms of not just the carriers but other capital outlays?

Mr. CONAHAN. In terms of Navy ships, yes, sir.

Chairman NUNN. What kind of growth does the Navy have to have in its own budget in order to properly sustain and man these capital assets over the next decade? Do you have anything like that?

Mr. CONAHAN. I don't have that number in terms of a percentage of growth in my head. I do know that the Navy's plans do not get them to where they want to be in terms of the ship mix, in the Navy's so called 600-ship Navy.

NAVY ASSUMPTIONS AND PROJECTIONS

Chairman NUNN. I remember that testimony, which was very interesting. But what I'm saying is, based on what they've got in this year's budget, in their own 5-year defense plan, and the capital assets they already have on line, what kind of Navy budget growth has to take place under reasonable assumptions in order to maintain and man these ships over the next decade?

Do you have any study like that? Do you have anything that you could refer to over the next 5 years or 6 years?

Mr. CONAHAN. No, I do not have anything before me. We haven't done that kind of assessment to include both the manning and the maintaining of the 5-year defense plan.

Chairman NUNN. How long would it take you to do it? Is that a huge project, or is that something that could be done with existing figures?

Mr. CONAHAN. I think the——

Chairman NUNN. The Navy presumably, hopefully, they have something like that.

Mr. CONAHAN. I think what we could do is go in and take a look at the Navy assumptions, and their projections; and that could be done in reasonably short order.

Chairman NUNN. That would be a great help to us if you could—we're going to start marking up at the subcommittee level approximately two weeks from today and we're going to start marking up at the full committee level in approximately three weeks.

If you could have something like that for us either three weeks from now or two weeks from now, preferably two, it would be a great help.

Mr. CONAHAN. We'll give you the best we can within those timeframes.

Chairman NUNN. And I assume, I don't want to add too much burden, but that's what we really need to look at for the other services too, but we'll confine it to the Navy right now.

But the question, if you could at least look at the services, Air Force, Army and Navy, and report to us, not in each case whether they're accurate and so forth; I'll ask that only with the Navy at this point, but whether the other services have addressed that. Whether we have within the Department of Defense that kind of planning mechanism going on, bow waves, manning, and that kind of thing: just whether those kinds of planning mechanisms exist for the Air Force and Army and Marines, and with the Navy, actually a check on where we're going and what kind of Naval budget growth has to transpire in order to be able to manage.

Mr. CONAHAN. I think we can provide the information, particularly the systems that are in place for the services themselves to make those projections.

Chairman NUNN. I'm not asking you to do an ad hoc from scratch. We may have to do that later. But I know you don't have time to do that.

I'm saying, on the Navy, check what they've done; and on the Army and Air Force, just whether that kind of plan exists.

Mr. CONAHAN. Yes, sir.

Chairman NUNN. And if it does exist, of course, we get it.

Thank you, Mr. Chairman

[The information follows:]

BUDGET PLANNING SYSTEM

The military services have a budget planning system in place and develops outyear projections. These systems are basically affordability testing models to aid the services in their budget planning. Since they are planning tools, the services normally do not share their planning data with the GAO

With respect to the Navy, the Five Year Defense Plan (FYDP) and the Extended Planning Annex (EPA) are the official documents that embody the Navy's out year plans. The Navy, using Defense Guidance, assumes a one to three percent real growth in the FYDP years (1988–1992) and one percent annual growth for EPA years (1993 and beyond), The plans are based on affordability assumptions and reflect trade offs between strategic and conventional forces.

Senator LEVIN. Senator Warner.

Senator WARNER. Mr. Chairman, in this discussion, I think, the issue has been very well framed by those participating, and we're grateful for the wisdom that Senator Stennis cast on this issue.

There's only one technical question that I'd like to ask, and if the answer is not readily available, I'm certain that the GAO and the Department of the Navy can provide it to the committee.

As we approach the decision on whether we can afford the 15 this year, and as you succinctly stated at this hearing, and indeed, during earlier hearings, that is the context in which we'll examine this issue.

There's the now-agreed-upon $700 million savings. And I'd like to ask of the witnesses, how much of that savings is incurred by virtue of the fact that the yard in which this contract would be placed has currently a standing workforce to do the contract, that is trained and skilled, having worked on comparable ships.

If we were to delay the award of this contract, the information that I have is that this workforce would begin to be let off by virtue of necessity. If the yard were to receive the contracts, they could do it almost next year or the year following. If not, a certain percentage of that workforce would disappear, and likely, it would not be regained, because those skilled trades can be utilized elsewhere.

They'd have to bring in the apprentice and start over. Have you factored that consistency into your thinking, namely, that if the contract is not put on for this fiscal year under consideration, but the next or the next, what's the attenuation of that skilled workforce, and how does that affect the potential savings?

Mr. CONAHAN. Yes, sir, we have. We've done it to this point in time in rather rough terms.

The Navy has also done it. The Navy has estimated that the cost associated with the interruption, and thus, the loss of skilled manpower, would be on the order of $400 million.

Senator WARNER. And that's over what period of time?

Mr. CONAHAN. That's—when you contrast the current Navy proposal with last year's proposal to buy these two ships with full funding in fiscal years 1994 and 1996.

We've talked with the Navy. We've talked with the superintendent of ships. And in fact, we've talked with the officials at the Newport News yard.

Senator WARNER. Mr. Chairman, in view of the fact that you and I must go vote, I wonder if we might recess now, and then we'll return and complete these answers.

Would that be agreeable?

Senator LEVIN. We expect Senator Kennedy back any moment. Did you have additional questions?

Senator WARNER. Well, I basically know these answers. Could the witnesses continue and the Navy be given the opportunity to likewise respond to this?

Senator LEVIN. Do you want to address further questions to Mr. Conahan? And if so, we'll ask him if he could stay for a few minutes until we come back.

Senator WARNER. If he will complete this one, then the Department of Navy represenative, Secretary Pyatt.

Senator LEVIN. I do have two additional questions for him.

We'll keep the record open. I have two additional questions I could probably get in now, but we could keep him here.

Mr. CONAHAN. I could provide this information if you like.

Senator WARNER. I think it is helpful to articulate it.

Senator LEVIN. As I understand it, that $400 million is part of the $700 million?

Mr. CONAHAN. Yes, yes, it is.

Senator LEVIN. There is no doubt that you save money by accelerating the purchase of the carrier. The question is, what does it cost you in terms of what you're not otherwise buying now.

Have you looked at the lost opportunities, the stretch-out costs that we're imposing upon ourselves, the premature termination of systems, for instance, of the helicopters, and compared those costs to the $700 million savings?

Mr. CONAHAN. No, sir, we have not done that. I have a listing of what the Navy has presented to the Congress.

Senator LEVIN. If you could submit that listing for the record.

Mr. CONAHAN. Yes, sir.

[The information follows:]

MAJOR BUDGET ISSUE

Subject: Aircraft Carrier Construction.
DOD component: Navy.
Issue: Major Budget Issue.

[TOA, dollars in millions]

	Fiscal year 1988	Fiscal year 1989
Alternative estimate		
Aircraft Carrier	(+644.0)	(+797.0)
Offsets	(−644.0)	(−797.0)

Summary of evaluation: During the Major Budget Issue review, the Navy proposed construction of additional aircraft carriers. The carrier force faces block retirements from 2000 to 2010. The most efficient method of replacing the carriers is to begin construction of the new carriers as the carriers currently under construction are delivered. This avoids disruption of the shipyard carrier workforce and skill base. The Lincoln (CVN-73) is scheduled to complete construction in fiscal year 1990. The alternative estimate adds $644.0 million in fiscal year 1988 and $797.0 million in fiscal year 1989 for advance procurement to support construction of a carrier in fiscal year 1990. The alternative also provides advance procurement funding to support construction of a second replacement carrier in fiscal year 1993. The alternative estimate provides offsets in each fiscal year to finance the aircraft carriers.

Alternative estimate: Approves advance procurement of $644.0 million in fiscal year 1988 and $797.0 million in fiscal year 1989 leading to construction of an aircraft carrier in fiscal year 1990.

Outyear impact:

	Fiscal year—		
	1990	11991	1992
Service estimate			831.6
Alternative estimate			
Aircraft carrier	(+2,288.0)	(+696.0)	(−626.6)
Offsets	(−2,288.0)	(−696.0)	(+626.6)

PROCUREMENT APPENDIX (NUMBER 130M)

[In fiscal years; amounts in million of dollars; Quantity in parentheses]

	1988	1989	1990	1991	1992
Weapons procurement, Navy:					
SM-2	(−250)	(120)			
	−116.7	−51.6			
Aerial targets		−29.0	−40.0		
Hellfire			(−100)		
			−4.0		
SM-2 mods	−21.0	−10.0			
Harpoon mods	−8.1	−9.4			
Sidewinder	(−400)				
	−19.7				
Laser Maverick	(−192)				
	−16.5				
IIR Maverick	(−67)				
	−12.0				
MK-50			(−12)		
	−4.4		−11.0		
3"50 Mods	−1.6				
Other missile					
Spt			−10.0		
WIF			−10.0		
Torpedo support			−5.0		
ASW range			−5.0		

PROCUREMENT APPENDIX (NUMBER 130M)—Continued

[In fiscal years; amounts in million of dollars; Quantity in parentheses]

	1988	1989	1990	1991	1992
Trident II			−15.0		
Military construction, Navy: Infrastructure growth		100.0	−100.0		
Shipbuilding and conversion, Navy;					
CVN			(+1) +2,082.0		
CVN: Adv. proc	+644.0	+797.0	+206.0	+696.0	−626.0
CV-SLEP	*−244.0	−97.0		−300.0	
LSD-41 cargo			(−1)	(+1)	
Var			−300.0	+304.0	
DDG-51			(−1) −853.0		(+1) +826.6
SSN-21			−10.0		
CG-47			−3.0		
Post delivery		−31.0	−2.0		
TAO		−15.0			
AO jumbo		−4.0	−5.0		
Outfitting			−15.0		
Aircraft procurement, Navy: Aircraft Mods		−250.0	−200.0		
Other procurement, Navy:					
Reactor power units	−200.0			−200.0	
Ship support			−30.0	−20.0	−10.0
Strategic platforms		−20.0	−97.0	−42.0	−10.0
Comm. & Elex.		−54.0	−275.0	−260.0	−65.0
Air ord & sonobuoys		−34.0	−60.0	−67.0	−30.0
Ord. support equipment		−72.0	−40.0	−61.0	−30.0
Civil eng. support			−47.0		−20.0
Personnel & command sup.		−10.0	−90.0	−20.0	−20.0
Intell. support			−26.0		
Spares		−10.0	−35.0	−30.0	−15.0

* −144.0 as per Taft's comments.

Senator Levin. And by the way, $700 million is nothing to sneeze at obviously. But we're investing $7 billion now rather than later, earlier rather than later, put it that way. And we have to compare the savings of doing that in this account versus what we'd save if we did it a different way or in other accounts.

That's really the issue that we're facing here.

A related question is this. You talked about calculating the present value of the different outlay streams for the two plans that are before us, the early replacement plan, and the original plan of buying them in the mid-1990s.

You talked about a 7.6 discount rate. If you discounted the outlays at this rate, which replacement alternative is financially more advantageous, the fiscal year 1990/1993 program, or the fiscal year 1994/1996 program?

Mr. Conahan. It is the current proposal by the Navy, it's the fiscal year 1990/1993 program, using that interest rate.

That comes in at $4.4 billion, and the fiscal year 1994/1996 single ship——

Senator Levin. No, no. You do it both ways, single ship and double ship.

Mr. Conahan. I have a number for that, Senator, but I hesitate to use it for the reason that we have not been able to find a good analysis, a good breakdown, a good buildup, if you will, of the Navy's estimate for a multi-ship buy in fiscal year 1994/1996.

Senator **Levin**. There's no use comparing apples and oranges. If the Navy wants to assume that Congress is going to buy two ships now, they might as well assume they're going to buy two ships later.

Otherwise, they're picking up a lot of savings for themselves which are just artificial savings. That's been your point.

Mr. **Conahan**. Yes, sir, and I have those numbers.

Senator **Levin**. If you could supply that for the record. Senator Kennedy, Senator Warner is coming back and does have additional questions for these two witnesses.

[The information follows:]

GAO Present Value Analysis of Carrier Acquisition Strategies

We performed a present value analysis with data provided by the Navy for three acquisition strategies. They are:

[In billions of dollars]

Acquisition strategy:	
Fiscal years 1990 and 1993 (multiship)	7.0
Fiscal years 1994 and 1996 (multiship)	8.2
Fiscal years 1994 and 1996 (single ship and new configuration)	10.0

A present value figure represents that amount needed to be invested now at the stated interest rate for a given period of time so as to yield the amount of funds needed at some point in the future. Present value analysis is useful when considering investment alternatives because it accounts for the time value of money. For example, a $1 billion expenditure that can be deferred for 5 years reduces the government's borrowing over the five year period and thus saves the government interest expenditures.

Using the average yield of outstanding government securities for the period comparable to the analysis we selected a discount rate of 7.6 percent. We applied this factor to outlay streams provided by the Navy. The analysis shows that procuring the two carriers in the fiscal years 1994 and 1996 with a multiship strategy is the preferred alternative when cost is the sole criteria. The analysis showed that in present value terms the fiscal years 1994/1996 multiship acquisition strategy is about $562.5 million less costly than the proposed program.

	Amount (millions)	Amount + or − proposed program
Present value analysis at 7.6 percent:		
Fiscal years 1990 and 1993 (multiship)	$4,362.8	
Fiscal years 1994 and 1996 (multiship)	3,800.3	−$562.5
Fiscal years 1994 and 1996 (single ship and new configuration)	4,704.1	+341.3

We also did a sensitivity analysis using a range of interest rates from 15 percent to 3.5 percent. The outyear multiship buy is the least cost alternative with interest rates above 5 percent. In the range between 4 to 5 percent the two multiship procurement options are equal. The proposed Navy program for fiscal years 1990 and 1993 is the least cost alternative for interest rates below 4 percent.

Senator **Kennedy** [presiding]. We've seen the purchase in what was actually requested by the Navy after their late December decision, to put in the two carriers.

You didn't do any evaluation of what the inflator might be in terms of those ships deferred, did you? They've deferred for example, destroyers and amphibious ships, which were the two major surface construction plans.

Mr. **Conahan**. No, Mr. Chairman, we did not do that analysis.

Senator **Kennedy**. Is it fair to think that since those matters were deferred into the future, if it's sauce for the goose it ought to be sauce for the gander, if you're going to have savings with an earlier purchase in terms of the aircraft carrier then a deferral of destroyers and amphibious ships and slipping those in to the latter years, there'd be some additional expenses associated with them?

Mr. **Conahan**. I think conceptually, yes. But the difficulty there is, you're operating at the margin in terms of what is deferred.

They deferred or deleted a fairly extensive number of items from the various appropriation accounts. And to try and put a precise value on that, I think, would be very, very difficult.

Senator **Kennedy**. There is the matter you were talking about with the Senator from Michigan. I'm sure you covered it before I came back, that's fine. But you said that they talk about or they calculated the present value of the different outlay streams for the two plans that we have before us, the early replacement plan and the original plan of buying them in the mid-1990's.

And you talked about a 7.6 discount rate. So if you discounted the outlays at this rate, which replacement alternative is financially more advantageous, the fiscal year 1990/1993 program or the 1994/1996 program?

Mr. **Conahan**. Yes, sir, let me give you the numbers on that. If you discount it at the 7.6 percent rate, the fiscal year 1990 and 1993 multi-ship program comes in at $4.4 billion.

A fiscal year 1994 and 1996 multi-ship program comes in at $4.0 billion, or some $334 or $335 million less.

Now I need to comment on that. As I said, during our earlier testimony, we could follow the way that the $7 billion estimate was worked up. And they used appropriate estimating technologies, and used appropriate indices and factors.

We were not able to find the breakdown of the number that they have for the estimate for a multi-ship fiscal year 1994/1996 buy, and therefore, though the discount brings that in at a lower rate than the 1990/1993, I would need to see better support for the base number.

And I need to make that caveat. But otherwise, it is a lower number.

Senator **Kennedy**. Well, then, can you say that you're really getting $700 million in savings by deferring it?

Your answer, as I gather from what you're just saying now, is no.

Mr. **Conahan**. I'm saying that there are different ways of looking at this. And if you look at it in terms of comparing the $7 billion with the $10 billion, you come up with a set of numbers, and you deal with them.

If you use present value, you come up with a different set of numbers, and that's what we're dealing with right now. And that shows that the multi-year buy in 1994 and 1996 results in less costs, too, a lesser cost than the 1990/1993 proposal of the Navy.

But as I say, I need to caveat here in this meeting, because I don't have a good breakdown of that 1994/1996 number.

Senator **Kennedy**. What information do you need that the Navy has to make a final cut on?

Mr. **Conahan**. Well, I think I would I like to see a comparable estimating methodology that was employed with the $7 billion number. And we've looked for it over the past several days, but in working with the Navy, we just haven't found it.

If they have it, and we can take a look at it, then we could come back to this committee and give you a non-caveated number.

Senator KENNEDY. Mr. Pyatt, do you have that information?

Mr. PYATT. To the best of my knowledge, we haven't created it. It wouldn't be difficult to create it. It's basically slipping the program for a certain number of years, and adding inflation, and raising the price.

However, I think it's an inappropriate use of discounting analysis, because you're not comparing the same two programs. When you do a discount analysis, in everything I've ever learned, is that you are to compare the financing aspects associated with different streams of outlays in this case for the same program; these aren't the same programs.

One program delivers ships earlier than the other. You need to make the value judgment of having ships earlier.

We do it in our presentation in talking about fixing up *Midway* and replacing *Midway*. That is another value judgment that needs to be made.

But we'll be glad to generate the numbers for GAO, no problem.

Senator KENNEDY. Well, I think it'd be worthwhile to generate the numbers in any event, because people are going to be using those matters in terms of the debate and discussion.

While we have you, Mr. Pyatt, I know Mr. Conahan has to leave. I would like to ask you to remain briefly, but if we could just start with the other witnesses, if that is all right.

And I know you have another appointment, but could we start Mr. Secretary.

[The information requested can be found on page 3126.]

STATEMENT OF HON. EVERETT PYATT, ASSISTANT SECRETARY OF THE NAVY FOR SHIPBUILDING AND LOGISTICS, ACCOMPANIED BY REAR ADM. WILLIAM D. SMITH, DIRECTOR, FISCAL MANAGEMENT DIVISION, OFFICE OF NAVY PROGRAM PLANNING, OFFICE OF THE CHIEF OF NAVAL OPERATIONS

Mr. PYATT. So much discussion has gone on prior to this that if I may, I'd like to submit my testimony for the record and then proceed with a few comments.

Senator KENNEDY. Fine.

Mr. PYATT. And I know you have questions, and I'd like to have the opportunity to discuss them with you.

I think the fundamental issue, as I've judged the conversation, deals with cost saving estimates, and what are they, how tangible are they, and how real are they.

I think we started out with the GAO with one point of agreement: that $700 million is the minimum amount of savings that one should expect to achieve out of the Navy proposal.

From that, you go on a series of discussions of a set of assumptions dealing with economic order quantity or not; is buying two carriers a realistic expectation that we will save money.

As I mentioned in earlier comments to Senator Thurmond, we put together our earlier plan that had two single ship carriers, because that's history.

An unusual event in history occurred a few years ago when we got two ships at once, and that was presented in the case of we're going to make a proposal to save some money. The Congress and the GAO agreed with our analysis and approved that program.

When we came back to look at the replacement cycle now, we took a look at our alternatives. We said, yes, we believe it's important to replace the carriers. The best way to do it is a repeat of what we've just done. It's been a very effective program.

So we decided to present it to the Congress. It's your decision whether or not you believe it's a good choice.

I believe it is for real; that the choice that you have before you that you can vote on is whether or not to accept the opportunity to save $1.1 billion in buying two carriers at once.

The issue on economic—on inflation. Yes, every economic course I've ever undertaken has said that when you're making an economic comparison, you do not compare inflation. Absolutely true.

So when you're looking for the economic choice, you should look in constant dollars.

We try in making our decisions to look at constant dollars. But it takes on a different perspective when you're talking about less than zero growth, as Senator Nunn just mentioned.

Savings in inflation all of a sudden become real. Dollars are dollars. They're spendable.

And I've said, as we've gone through various exercises here in the last few months, no one has ever rejected in a budget cut a dollar allocated to inflation. It's been taken.

Configuration changes. Again, that was a topic brought up, and a very debatable, and legitimately debatable issue. How much can the Navy control configuration of a carrier in the out-years compared to the current years?

I can tell you, I can control one made now. I can't control one made in 1994. So that's a decision.

GAO mentioned the cost of keeping old ships. It's truly a cost. How long the *Midway* will last, I don't know. We know we've had our recent problems. It didn't behave the way we thought it would based on the engineering analysis.

So as you project older ships into the future, it's a problem. I don't know how to estimate it.

We also need to make a comparison of one of the ships that's replacing the *Midway* has 66 aircraft. The carrier that we plan to buy would be a *Nimitz* class with 86 aircraft.

The *Midway* has no long range fighters, the F-14 category. It has no outer screen ASW, the S-3 category. That is just a fact of life.

Senator KENNEDY. I want you to finish up, but all those are points that were known last fall when they submitted the earlier projection.

You're not giving us new information.

Mr. PYATT. I've given you newer information, not on the ships, no, sir.

Senator KENNEDY. Even on the configuration of the aircraft that are on the ships. Is this new?

Mr. PYATT. That is not information. That was known last fall, yes, sir. But I'm saying they're two different ships we're talking about.

Then I turn, because my job is buying ships, I turn to our analysis and our predictions of how well or how poorly we've done in buying ships.

In the CVN-72 and CVN-73 case, which was presented to the Congress, we made a projection that we would save $754 million compared to a single-ship procurement profile. The Congress asked the GAO to check up on our numbers, and they concurred.

However, reality is that we have produced an additional $1.3 billion below the amount of money that the Congress appropriated. That's been turned back in various program, including the Appropriations Committee helping fund the MX program for $450 million.

The cruisers. Our analysis projected in going to second source, an increase of $400 million. Actual results to date, included funds appropriated and turned back or applied to some other program is a $2.6 billion savings.

LHD-2 and -4: Initial estimates presented to Congress for a three-ship program in the out-years, not for appropriation, for $4.3 billion. We're currently under contract for $2.4 billion, and I expect to bring the ships in at that price.

A Time article in 1983 said that $12.7 billion in the Navy shipbuilding program was underfunded. That program has been executed at $10.4 billion, including the addition of an FFG and a battleship reactivation funding.

So we're confident about the numbers we're representing to you. We believe, I believe, if anything, they will fall as time goes on, because there are improvements in the manufacturing process that we can achieve on these carriers, and we'll seek them out.

Finally, I would like to say, on the point of inflation, as we went through these drills, no one ever asked or refused to take back a dollar previously allocated for inflation; to them it's real money.

I think that's still the case. That finishes my short summary.

[The prepared statement of Mr. Pyatt follows:]

PREPARED STATEMENT OF EVERETT PYATT, ASSISTANT SECRETARY OF THE NAVY (SHIPBUILDING AND LOGISTICS)

Mr. Chairman and distinguished members, I am Everett Pyatt, Assistant Secretary of the Navy (Shipbuilding and Logistics).

I am pleased to appear before this joint committee, along with Admiral Smith, to discuss our aircraft carrier acquisition program. Last month the Secretary of the Navy appeared before this combined committee and provided a complete analysis of the requirement for the aircraft carrier force structure. He also presented our plans to *replace* two aging carriers with funding to begin in fiscal year 1988. I will focus my remarks today on the details of our procurement plans for replacement carriers.

AFFORDABILITY

Our 600-ship Navy is now a certainty. An average of 20 new construction ships must be authorized annually in order to maintain that 600-ship force level. The current five-year shipbuilding plan provides for 102 new construction ships. It will require an average annual SCN appropriation of about $11.0 billion, in fiscal year 1987 dollars, to sustain the 600-ship force level. That is just about the amount that the Congress has been appropriating the past few years. Within that funding level we have programmed two replacement aircraft carriers.

In the face of increased demands for conventional defense capabilities and an era in which we see foreign bases and ports of call at risk the aircraft carrier will become an even more important tool of our conventional defense and foreign policy. The President's Budget for fiscal years 1988 and 1989 contains long-lead funding for two nuclear powered aircraft carriers for which the Defense Department plans to request authorization in fiscal years 1990 and 1993. The fiscal years 1988–89 long-lead funding is the beginning of a balanced, long range aircraft carrier procurement strategy which is of paramount importance to the execution of the Maritime Strategy to meet the growing Soviet deep water threat. The total cost of the two ship program is expected to be $6.9 billion. We estimate that the two-ship program will provide substantial savings compared to the previously planned and programmed ship acquisition plan. We need to move forward now—if we wait we are in danger of losing the carrier building expertise which has been developed at Newport News Shipbuilding and Drydock. That expertise would otherwise have to be rebuilt at substantial expense some time in the future. We must move now to avoid the bow wave of carrier replacements caused by commissioning seven carriers in seven years built at three shipyards in the late 1950s and early 1960s. Even with our long range carrier replacement program, six of our existing carriers will have to serve 50 or more years as front line warships to sustain a 15 deployable carrier force level.

Recent commentaries have suggested that new strategic forces, including these aircrarft carriers, are being bought at the expense of other conventional forces. The arguments tend to focus on inter-service or inter-agency competition for funds—such stories may whet the appetite of underemployed think-tank analysts, but they fail to capture the essence of the inter-service planning which has characterized the Reagan Administration. Improvements have been gained across the board; our strategy is forward looking and flexible, built on the combined arms strengths of all our services and the many contributions of our allies. The threat is the Soviet Union and its Communist surrogates—not the budget analyst or programmer. The Reagan Administration has consistently supported the long range goals of all the services—for the Navy that goal is a 600-ship Navy centered on 15 carrier battle groups, four battleship surface action groups, and 100 nuclear-powered attack submarines.

SAVINGS

As part of our planning for the fiscal years 1988/89 budget it became clear that the most affordable way to replace our aging carrier force was to eliminate plans for outyear carriers which included costly enhancements and instead procure repeat design carriers on a more cost effective basis. The 1988/89 budget includes $644M and $797M respectively to begin procurement of the long lead equipment required to economically purchase these two replacement CVNs. Fiscal year 1988 funds will procure equipment to support a contract award for CVN 74 in fiscal year 1990. Fiscal year 1989 funds will procure equipment to support both CVN 74 and a contract award for CVN 75 in fiscal year 1993. There are major advantages to the Navy and ourselves as taxpayers in this improved acquisition strategy.

The major advantage is cost reduction. During the past several months there has been discussion as to the absolute dollar figure of those savings. Estimates range from $750M in constant fiscal year '83 dollars to $3.0B in then year dollars. The Navy is proud to take credit for savings of "only" $750M although we believe the actual savings will exceed this amount many times over. A savings of $750M is enough to buy an SSN, a cruiser or 6 fleet oilers. The key to sustaining required naval force levels is a stable funding profile that takes advantage of every cost saving opportunity so that whole ships can be built with savings generated by effective management plans.

INDUSTRIAL EFFICIENCY

Our analysis shows that the largest savings are generated by economic order quantity buys of multiple shipsets of material. Start-up and nonrecurring costs associated with single ship buys are reduced by allocation to two hulls rather than one. Additional savings accrue due to the improved planning and productivity resulting from series construction of large modularized structures from prefabricated subassemblies.

The CVN series production and modular construction process applied to *Roosevelt* (CVN 71), *Lincoln* (CVN 72), and *Washington* (CVN 73) is demonstrating dramatic cost savings resulting from an efficient material acquisition profile and from shipbuilding learning curves among the workforce and lower than anticipated inflation. The early and below budget delivery of *Theodore Roosevelt* in October 1986 confirmed the advantages to the taxpayer of this acquisition plan. Adherence to our previous replacement profile would have resulted in the serious degradation of the shipyard workforce and supporting construction skill base. The acquisition strategy which shaped the decision to advance the CVN replacement program is a composite business strategy having two basic elements, two carriers being bought on a multiship basis, and their being bought without a break with the carriers already in production, and with each other. Our program takes advantage of the productivity savings inherent in a stable "new carrier" construction workforce and maximizes the impact of learning during the process. The achieved savings result from this strategy and would not be possible with the procurement of CVN 74 and CVN 75 under the original schedule, because the builder would have experienced a three-year break in the production line requiring rebuilding and retraining of the workforce. We are now in the same position we were for the fiscal year 1983 procurement of CVN 72/73—the builder has a new carrier under construction and continuous production of two follow-on carriers offers significant savings. A break in this required replacement program would be extremely costly and counter-productive to our carrier replacement program.

These savings are not possible with single ship buys and were the overwhelming reason for the congressional support of the fiscal year 1983 two ship carrier program. In addition to the $754M predicted at the start of the fiscal year 1983 two carrier program, and confirmed by GAO before funds were appropriated, over $1.2B has been saved compared to the President's budget allowing the Navy to return $450M from the carrier program alone for reprogramming.

SUMMARY

The need for approval of this program this year is clear. We owe the American public superior conventional defense at the least cost. The U.S. Navy carrier force has been the weapon of choice in 80% of the crises we have faced as a nation during the past decades. The future portends ever greater reliance on our carriers as overseas airbases and overflight rights are increasingly at risk and low intensity challenges increase. We have a very efficient plan to preclude reliance on 54-year-old ships as the spearhead of our maritime defense.

During the period from 1983 to 1986, the Navy has produced its shipbuilding plan at a cost $6.8B below the President's request. This is in direct contrast with an article appearing in TIME Magazine in 1983 alleging that the $12.7B shipbuilding budget was unrealistically low. Yet that program was executed at a cost of $10.9B including the addition of partial funding of a frigate and a battleship reactivation. Experience indicates our CVN cost projections are realistic. Your recognition of the urgency of the need for replacement carriers now at this lower cost will be a service to your constituents, and future sessions of Congress. Your support is necessary and appreciated.

Mr. Chairman, that concludes my statement.

Senator KENNEDY. Thank you Mr. Pyatt. Admiral, is there anything that you wanted to say?

Admiral SMITH. Thank you, Mr. Chairman.

I would like to make two comments relative to remarks made earlier about the unavailability of resources to buy sustainability components or sustainability improvements, because the dollars were laid out for the carriers.

In the preparation of this fiscal year 1988, fiscal year 1989 budgets, what the Navy did was to reprice its program for a somewhat higher risk program, but a program in which every business decision played a predominant role in the decision to include that piece of equipment or that piece of hardware in the budget.

We finished our budget scrub within the Navy, and there was sufficient money in both 1988 and 1989 to fund the advanced components for those carriers without cost to any particular program.

Those comments and complaints that you have received from members of the Navy, from members of the GAO, and constituents, that program *X* or program *Y* was underfunded to pay for the carrier was just not true; because that's not the process that was used within the budget development and formulation.

The programs that are now funded at levels less than people would like to have were funded that way for sound business reasons. I think that's an important point.

And certainly, the second item, sustainability within the Navy, a concern to Members of Congress, and rightly it should be; the Navy's program on sustainability has grown at about 11 percent a year since the beginning of the Reagan administration.

We've continued to fund sustainability as a top priority item. And we believe that the sustainability is currently funded at the maximum level that we can get a product out within the budget timeframe.

Senator **Kennedy**. There was a substantial reduction, though, was there not in the proposal that was actually made in your alteration and change in the Navy's request after the two aircraft carriers entered into the budget decision?

Now you may say, we may be up to speed in all of these areas, but you find, as I see it, from perusing your own material, you get ship deferrals of $108 million; you get limitations on carrier SLEPs of $641 million; the readiness and sustainability account, $2.4 billion; ships that were deferred, a destroyer two years later, an amphibious ship, a year later.

The limitations on the SLEPs, you're talking about the refit, changing the refit, which has some impact on capability. You can address that.

But on the readiness and sustainability, $2.4 billion. Those are, as I understand, ammo spares, and sonar buoys. If you don't need them now, I suppose you want to find out who put them in before.

The aircraft procurement, $450 million. That deals also with modification. As I understand, the A-6 still have cracks in the wings; the S-2 still have cracks in the wings. And military construction, $200 million, yet you're still moving ahead in homeporting.

Now those are the figures that come out as a change since you put the aircraft carriers in. Now maybe it's all coincidence.

Mr. **Pyatt**. Mr. Chairman, I think it's fair to say that if all of our naysayers who believe that their dollars paid for the carriers, there would not be two carriers worth of advanced procurement; we could afford about six or eight.

One of the things that you have to realize is that from the time that the fiscal year 1988 dollar levels were originally established, a reduction of almost 10 percent was impacted on Navy programs.

That 10 percent reduction came in three stages, during the Internal Defense Department programmatic review.

When the defense guidance was issued, and the recognition that Congress was lowering the fiscal year 1987 top line, we took almost a $3 billion reduction in that particular event.

An additional $5 million program was reduced during the end of the programmatic reduction drill conducted by the Secretary of Defense in the late summer. Then on top of that was another $4 billion reduction during the budget process.

So when you look at those coincidental and concurrent events happening with the Navy's decision to put the carriers in the budget, it's very difficult to point the finger at any particular program.

Now I could address that the cargo-variant LSD was moved to the right 1 year for sound business reasons, to give a year's gap between the lead ship and the second ship of the class.

The DDG–51 that was moved to the right several years was done so at a time that the Congress, in its 1987 authorization act, added a sixth Aegis ship, and reduced the requirement for that DDG–51 in fiscal year 1990.

If you look at the carrier SLEP program, when the Secretary of Defense made the decision that we would buy new carriers, the importance of the blister or the hull protection portion of the SLEP reduced itself in importance from the Navy's viewpoint, and we took out that portion of the carrier SLEP.

If you look at the aviation programs that were reduced in modification, we find that the obligation of aircraft modifications is running significantly behind what we would like from a good business operation.

So we took money out of those accounts in order that we could get the modification program caught up with the funded delivery period.

I think the other issue you mentioned was aircraft themselves. Again, each of the aircraft reduction decisions was made in the larger context of the long-range aircraft requirements of the Navy, and modifications to particular types of aircraft, which caused a down-ramping in 1988/1989, so that those modifications wouldn't have to be back-fitted in as many aircraft.

As far as the sustainability portion, I think you'll see that the growth of sustainability within the Navy budget is still at an increasing percentage from what was authorized and appropriated in fiscal year 1986 and fiscal year 1987.

Senator **Kennedy**. Those items that I mentioned to you are all from the Navy's own program, aircraft carrier construction, signed by Mr. Taft the same day that you put the aircraft carriers in.

The same day you put those items in, those items I mentioned were deleted. Now, maybe there's some good explanation for it.

Mr. **Pyatt**. There is a good explanation. I will give that later.

Senator **Kennedy**. OK, we'll have a chance to get that. I would like to see if we could get to Mr. Conahan.

I apologize to our witness. You have been very accommodating. We have been moving and shifting around, and I am grateful to you. We have tried to accommodate the members.

Senator Warner is here, and we will recognize him.

Senator **Warner**. Mr. Chairman, I thank you for the courtesies extended this Senator.

The witness from the GAO was midway, or a portion of the way through his response to my questions, which he knows well.

And if the record might reflect that his additional response at this time could be coupled with his earlier response.

Mr. **Conahan**. Yes, Senator, we visited the Newport News Shipbuilding Company in March of this year, just about 2 or 3 weeks ago.

And we learned that the carrier workforce is currently at about 10,000 people, of which 8,000 are considered the core group. Of that, about 40 percent, somewhere between 3,000 and 4,000 people, are in the steel trades.

The 8,000 people are working on three carriers right now, the new construction of the CVN-72 and the CVN-73, and the overhaul of the *Eisenhower*.

The workforce has been allowed to decline over the past year or so. In fact, they let 1,250 people go in November 1986, and they claim that they will need to lose another 1,750 by the end of the year.

If they don't get two more carriers, they claim they're going to have to lay another 30 percent off. This comes out of the core staff primarily.

Now, they will be working on the *Enterprise*, but they claim that most of the work there will be primarily outfitting, and it will not require a lot of steel workers.

So you're going to see the steel workers, according to them, go off. Now, whether they are able to obtain other employment, and whether that company can get them back if they need them, is a question I do not have the answer to.

But that is the situation.

Senator WARNER. I think that is a pretty serious situation, because they're well trained. They have worked now for several years on this last ship. Their skills contribute to the cost savings; am I not correct on that?

Mr. CONAHAN. That is correct.

Senator WARNER. And there's less of a learning curve. All of these factors augur for that framework of information to be considered along with the other framework. A fact, as we reach this decision.

Would Mr. Pyatt at this time like to amplify in anyway on that response?

Mr. PYATT. Well, that was one of the things that we first started to look at. Because as we saw the carriers and we saw the future, we were clearly at a crossroads that if we didn't put a carrier in now, as new construction, the next opportunity would see further decline as the carriers currently under construction were finished, and we would have to pay to rebuild the workforce on a subsequent carrier on our earlier plan.

That was one of the motivating factors in making the change. We perceived the opportunity to save money.

Senator WARNER. Is that the change, to put it in this fiscal year?

Mr. PYATT. In this fiscal year, rather than in the other program, in the out-years. That was one of the motivating factors.

We also began to look and see how old some of the ships were going to be that needed to be replaced, and it seemed that our plans should be changed.

Senator WARNER. I thank the Chair. Those answers were quite explicit and to the point. Thank you.

I thank the witnesses, and I thank the GAO for their courtesy.

Senator KENNEDY. Thank you.

Mr. Conahan has to leave, and I would ask, if we have further questions, we submit them to him. He has to prepare for another committee meeting.

And we will then just continue with our final panel. So we thank, you very much, Mr. Conahan. We thank you for your appearance here, and we will continue with our witnesses here.

I will ask the staff to follow along in terms of the timing. And the recognition will be consistent with our committee rules.

If I could come back, Admiral, we were talking about the Navy's own document in terms of the matters which I raised with you; all are being slipped as a result of the decision that was made.

SLEP PROGRAM

I think you're familiar with the one that I just listed. The various ship deferrals, the SLEPs. Why don't we go back to those if we could.

Mr. PYATT. May I discuss the SLEPs for just a second?

Senator KENNEDY. You can in just a second. As I understand it, we are dealing with the electronic and the sensor upgrades. Therefore, if you're going to defer the SLEPs, the question is, aren't these carriers going to be using the technology from the 1950's, and therefore, be less capable?

Mr. PYATT. No, the issue on the SLEP related to adding a blister like on the *Midway*, and the internal magazine protection. Those two things were about a $300 million bill. We made the decision to add the internal magazine protection, which no other conventional carriers will have.

This is in addition to the scope of previous SLEPs. We made the decision not to put on the blister because we weren't sure it was going to work.

Our predispositions were confirmed later with the *Midway* experience.

Senator KENNEDY. As I understand it, 641 is the figure we have in your document; not 300.

Mr. PYATT. Yes.

Admiral SMITH. Mr. Chairman?

Senator KENNEDY. Admiral.

Admiral SMITH. If you'll look at the front page of that Internal DOD document that you have there, you'll notice in Mr. Taft's handwriting at the bottom, that he says minus $144 million for the 1988 SLEP, with Navy to assure magazine vulnerability.

[See page previous information supplied, page 3128]

Admiral SMITH. So the Deputy Assistant Secretary of Defense—

Senator KENNEDY. I'm sure we're reading from the same document. I would make that a part of the record, but that is not on the copy that I have.

Mr. PYATT. We will make this copy a part of the record.

Admiral SMITH. The point there is that Mr. Taft insisted that side protection be included in the carrier SLEP. I would like to clarify that the only thing that was taken from the SLEP of the carrier was the work for the blister.

None of the normal SLEP program was reduced.

Now it is not normally a modernization effort that we send the carrier in to a service life extension program for. Normally the carrier goes into a service life extension program in order that its basic infrastructure, propulsion, equipment, tanks, voids, hull, piping, is refurbished in order to extend its life for those additional 15 years.

If modernization is to be done, and it's affordable, we may do modernization at that time. But it's normally done on a shorter selected restricted availability period in the ship's own home port.

So that was not a basic change that was driven by any of the new carrier procurement decisions.

AIRCRAFT PROCUREMENT

Senator **Kennedy**. What about the aircraft procurement that was reduced by $450 million, and it came specifically from the account for aircraft modifications. And this is at the same time the Navy is having a problem with two of its most important fighters, the A-6 bomber, and the E-2C early warning aircraft?

Admiral **Smith**. Yes, sir. Mr. Chairman, I think what you would find if we could turn the clock back that the seriousness of those two problems were not realized at the time this budget was submitted in August. And this $250 million that you see in the internal DOD document is merely an attempt on the part of the Navy to realize that the funding provided for those modifications was not being spent by the Naval Air Systems Command.

They were so backlogged with work, and are currently backlogged, that to put that money against the program in that fiscal year would not result in the procurement of any additional modifications until the next fiscal year anyway.

And since there is more risk in this budget than we would like to have, the decision to defer those modifications for another fiscal year was a decision that the Secretary of the Navy made quite readily because it made it quite a low priority item.

Mr. **Pyatt**. We were convinced we were going to lose that money through the appropriations process anyway because of our past performance.

Senator **Kennedy**. How much is in the budget that you think you're going to lose? That's a hell of a reason to give us.

That's an interesting comment to make, that you think you're going to lose it, so you pack it in there just in case.

Mr. **Pyatt**. We took it out. We took it out, because as he described, when we got to the budget review process, it would not be supportable.

Senator **Kennedy**. Well, we'll come back to some of these.

The Senator from Texas.

Senator Gramm. Thank you, Mr. Chairman.

As I understand it, the first carrier that we're going to pull out of service is going to be the *Midway*, and the *Midway* does not carry the F-14, is that right?

Mr. **Pyatt**. That's correct.

Senator **Gramm**. Now, in addition then to the cost of this first new carrier, we're going to be looking at providing the additional equipment. I assume the idea would be to take off the *Midway* what we've got on it and what could be used, and then supplement that with additional equipment.

Now obviously, we're going to be upgrading. The A-7 is going to be coming out of the inventory, and that may go to the Air Force and be rebuilt as a strike fighter. A lot of other things are going to happen.

This is a long time away. I think this really brings home the kind of defense commitments we're making way in the future without anything approaching perfect knowledge of what technology is going to be during that period.

But how much additional equipment are we looking at to bring this new carrier up to a full complement of crew and weapons as compared to the *Midway*? Do you have any figures on that?

In other words, we're not just going to buy this ship, we're going to equip it as well.

Mr. PYATT. Well, I don't have the exact numbers with me. But we would continue to have the F-14 in this period, and would undoubtedly have to buy I think it is 14 F-14s for that ship.

We would have some extra F-18s because the *Midway* has more F-18s than do other carriers. And there's a total—I have a note here, but there's a total difference of 20 airplanes between the two ships; I guess that's the best way to approach the problem.

Senator GRAMM. So you're going to have 20 more on the new ship?

Mr. PYATT. Yes, sir. And we would need to buy the special test equipment associated with the different models of airplanes, and I'd have to furnish an idea of the price for the record.

Senator GRAMM. If you could do that. I know just coming off the spur of the moment that nobody can figure that out. I just thought you might have the figure.

The fact is that by pulling down the *Midway* and putting in this new *Nimitz* class carrier, we're going to have a pretty substantial increase in power projection, even though we're going to have the same number of carriers.

Mr. PYATT. Yes, Sir.

Senator GRAMM. In terms of personnel, in terms of running the *Midway* versus operating the new *Nimitz* class carrier, are we talking about more people or fewer people?

Admiral SMITH. We should take that for the record, sir, to be precise. But I think the numbers are very close to the same.

But what you would see is, the people on the *Midway* are living in spaces that are far below what we would like to have for our hardworking sailors.

You would see that the same—there would be a few more people because there are more airplanes on the new carrier. That's the principal piece.

[The information follows:]

The two new 94,000 ton displacement carriers will be replacing aging 60,000 ton displacement ships designed 45 years ago. The enhanced capability, both in size and striking power, is a quantum increase (60 aircraft as opposed to 85 aircraft). As a result, manning will increase slightly to support these aircraft and the larger ships. The difference is 809 personnel when comparing a *Midway* class ship and airwing to a *Nimitz* class ship and airwing and 115 for a *Forrestal* to a *Nimitz* class. Although difficult to quantify at such an early stage, it is believed these increases will be offset by lower manning required on *Aegis* cruisers as they replace the older CGs.

Senator GRAMM. Well, I tell you what would help me, if you could begin with the *Midway* and just provide me with a piece of paper that listed the new weapons system as we phase out the *Midway* and as we bring on the additional *Nimitz* class carrier, how many of each weapon, how much that's going to costs, how many people, the difference in the makeup.

[The information follows.]

The following list is provided as requested:

	Midway	Nimitz Class (Notional A/W)
1. Weapons systems:		
F/A-18	36	20
A-6	16	20
EA-6B	4	5
E-2C	4	5
SH-3/SH-60F	6	6
F-14		20
S-3		10
Total	66	86
2. Weapons systems cost differential (millions of dollars)		+$152
3. People (officer/enlisted):		
Ship	146/2751	163/2939
Air wing	246/1520	322/1870
4. Operational:		
Displacement (tons)	62,600	94,000
Catapults (each)	2	[1] 4
Refuel cycle (days)	3	[2] 2
Aviation fuel (gals)	1.2MM	3.8MM
Weapons storage (cu.ft.)	365K	670K
5. Effective launch and recovery capability (percent of on station time):		
North West Pacific—Jan–Mar, Sea State 6–7	70	87
South China Sea—Dec–Feb, Sea State 6	75	89
North Arabian Sea—Jun–Aug, Sea State 6	60	87

[1] Equates to 75% more sorties per unit time.

[2] Weeks.

Senator GRAMM. You're going to be dealing with a nuclear ship versus a conventional one. And then try to give me some ballpark—I know it's hard to get an analogy, but if you could try to put it just what it would cost to operate the ship, the number of sailing hours that you expect, operating the *Midway* versus operating the new *Nimitz* class carrier.

In other words, I'd like to try to look at this like a new factory you were going to build. And are you going to build a new one or are you going to try to operate the old one? And you're trying to see what your net cost is going to be. And is the utility bill going to be lower because it's got better insulation. Are you going to save people?

I think that kind of analysis on the *Midway* would be very helpful. Since you're going to pull down, the next one is going to be whichever carrier is in the poorest shape at the time, so I don't think we need to go that far.

But on this one, if you could sort of try to give me the equivalent of operating cost. I think one thing we might try to do is factor in, even though obviously our fixed cost is going way up by buying the new *Nimitz* class carrier, I think it would be interesting to see what is happening to our operating cost, manning the ship, the number of hours we're going to steam, what the average cost is going to be relative to what we are paying now; personnel; the various grades of people we will use; and then if you could throw on just a short thing about expanded capacity, I think that would be helpful to those of us who are trying to look at the overall big picture.

Mr. PYATT. One element that big picture that we'll include is that the *Nimitz* class carrier can operate in conditions and weather conditions that the *Midway* cannot.

We'll try to put in some idea of the fraction of time that the ship can be expected to operate in various oceans of the world, just to help round out your request.

Senator GRAMM. Well, the only final point I'd like to make, Mr. Chairman, and I can understand the position of the people who are here advocating an individual weapons system. I don't have any doubt we need it. I don't have any doubt you believe in it.

The constant source of frustration I have is in trying to measure all of these things and bring them together. I don't have any doubt that you looked at this thing very closely, and looking at the 312 level in the President's budget, decided you wanted these two carriers.

Now when we have to make the final decision, we may be making that decision at some level below 312. And what always frustrates me is is that we end up having to inject our judgment at that point as to what the new mix has been, because you have told us what you wanted at 312.

And I think at some point, depending on how soon we adopt a budget, what kind of level of spending it has, I think it would be very useful for this committee, and certainly for this individual member, if we're marking, God forbid, say at 300 or 305, it would be interesting to know how that would change your desired mix.

And if we had some indication of at some budget level how valuable is this relative to the SSN-21? I know we want both.

Those are the kind of figures that I think are very valuable in making public policy decisions. We almost always make those decisions in the absence of that information.

And I think to whatever degree you can give us not only the information I've asked for, but at some point I think it would be very helpful, and you can certainly pass on to the people that you are working for and with, once we get a new BA figure, it would be very helpful if we could quickly go back through the major weapons systems and reshuffle these priorities to determine, you wanted this mix at 312, but if it were 300, what would you want, that kind of information would be very valuable.

Now, I don't doubt that when we get through conference there will be a lot of pork there that you would not want.

Mr. PYATT. We are prepared to help you in that as you go along.

Senator GRAMM. Well, that would be very helpful. Thank you, Mr. Chairman.

Senator KENNEDY. The Senator from Alabama.

Senator SHELBY. Thank you, Mr. Chairman.

CRUISER AND DESTROYER SHORTFALL

Following up a little on what my friend from Texas, Senator Gramm, has been talking about, there has been some information to the committee from various people that said that the shortfall is not really with the carriers at the moment and won't be for a few years, but the shortfall is about cruisers and destroyers and possibly troop ships and other things of that nature.

Senator Gramm says if we do come up with 3 instead of 312, as far as a budget, or something along that line, wouldn't the question then be, what is critical to our national security? Not necessarily what the Navy wants.

I've got all the respect in the world for the Navy. And I've been sitting in these hearings for months now, and just about everyone up from the Navy, if you mention a carrier, shoot, I want it. We've got to have it.

I believe if we were talking about building four carriers or five, that there wouldn't be any dissent from the Navy at the moment.

But we are going to have to shuffle that budget, in view of national security, and as a Senator said, probably some political decisions that we make.

I would wonder at the moment how many cruisers and destroyers, which there is a shortfall now, according to some other people's testimony, that this money that we could build the two carriers on an accelerated basis, what would that build as far as cruisers and/or destroyers, Mr. Secretary.

Mr. PYATT. Well, cruisers run about $800, $850 million each; and destroyers run around $700 million.

Senator SHELBY. So we would get about eight cruisers, couldn't we? Eight or nine?

Mr. PYATT. Yes.

Senator SHELBY. And the destroyers would run what?

Mr. PYATT. They are about $700 million. They will be. We're working down the learning curve on that.

Senator SHELBY. That would be a lot of cruisers, wouldn't it?

Mr. PYATT. Yes, but you have got to look at what each particular ship does in the overall mix, and the contribution it makes as part of the task force.

I understand what the Senator from Texas is saying, because we all have to face the realities here of the budget review and the review that you have to go through, and one needs to make allocation decisions.

We believe that it is most important for naval warfare to keep the carriers, and we think we have a plan to take care of buying cruisers and destroyers.

Senator SHELBY. What does a Trident cost?

Mr. PYATT. A billion-five, or a billion-six? So for the same thing, we'd get about six Tridents, more or less, for these two carriers?

Well, at $3.5 billion each, you'd get two. You'd get four for two carriers.

Senator SHELBY. Four Tridents. And as far as the national security, and looking at the global situation, would the Tridents possibly be more important to national security than two carriers?

Mr. PYATT. Well, on that, I think you need to do a warhead count, and take a look at all the warheads that are around to make up your own mind.

Senator SHELBY. And also, when you're doing the warhead count, on a carrier you would have to really consider the vulnerability of a big carrier, wouldn't you?

Mr. PYATT. You would have to consider it, but you would also have to consider its contributions, as Senator Stennis mentioned earlier in this discussion.

Each has a particular role in our national defense posture, and you need to balance the strategic efforts against the conventional efforts.

Carriers contribute primarily on the conventional side.

Senator SHELBY. Well, if you compare what I was talking about, how many Tridents you could build as far as the strategic defense, and then, for the amount of money you would pay for those two carriers, and then compare, as I did a few minutes ago, with our words, how many cruisers or destroyers that they would build, conventional type, or some of both, there's a——

Mr. PYATT. Again, we put a mix in the program. We think a mix is appropriate. We have a cruiser program, and a destroyer program, and they're running along pretty well.

Senator SHELBY. Do you believe there's still a shortfall in cruisers and destroyers?

Mr. PYATT. Well, according to the GAO study, which picked up a Navy study that I couldn't identify as its baseline, they say there was a shortfall in surface combatants.

That, to me was a number that I hadn't seen before, so I don't know where they drew their conclusions from.

Senator KENNEDY. If the Senator would yield.

Senator SHELBY. I will yield to the Chairman.

Senator KENNEDY. You have the 1985 CBO study, and then the more recent one, said we have requirements for 63 DDGs, 51 class destroyers, and only have programmed 29.

Mr. PYATT. That's the study. As I recall the other part of that study, they totaled up 250 or 260 surface combatant ships.

Our planning figures call for about 240. I fully believe the DDG will go beyond 29.

Senator KENNEDY. Thank you.

Senator SHELBY. I have no further questions, Mr. Chairman.

Senator KENNEDY. The Senator from Mississippi.

Senator STENNIS. I have no more questions; thank you.

Senator KENNEDY. The Senator from Michigan.

Senator LEVIN. Thank you, Mr. Chairman.

Mr. Pyatt, last September, you had a 5-year shipbuilding plan for the Navy which showed no new carriers in the 5-years up to fiscal 1990; is that right?

Mr. PYATT. Yes.

Senator LEVIN. Something's happened since last September 30.

Mr. PYATT. Well, as I stated earlier——

Senator LEVIN. We could have saved money buying them earlier rather than later last September 30. Those figures aren't any different.

There's inflation in out-years as of last September 30, just the way there is now.

What's different now than what was in existence last September 30? Why should we accelerate? The issue is whether we accelerate the purchase; not whether we delay.

Because we have a 5-year plan as of last September 30, that's just a few months ago, saying, no new carriers through 1992.

So tell me, what is new since September 30?

Mr. **Pyatt**. As I tried to describe, I guess you were out, when we started looking at our carrier replacement profile, and we started looking at the shipbuilder basically going out of business in the carriers, we saw that we had a problem we needed to work on.

Senator **Levin**. You mean, you didn't start before last September 30 doing that?

Mr. **Pyatt**. We started looking about that time at our carrier replacement profile.

Senator **Levin**. Well, why didn't the Navy look at that profile before it told us it wouldn't need any carriers? I mean, don't we have a right to rely on that representation of the Navy just as recently as September 30?

Mr. **Pyatt**. Yes, you do.

Senator **Levin**. In other words, you didn't do the work that you should have done?

Mr. **Pyatt**. We could have done that better. We should have had the replacement in earlier.

Senator **Levin**. All right. So in other words, you just didn't do what should have been done at the time you prepared that?

Mr. **Pyatt**. At the time we prepared that, we didn't have it in. The profile you see is an accurate representation of the profile that we had.

You must give us a little credit of going back and looking and saying, oops, we made a mistake.

Senator **Levin**. I don't mind that at all. What bothers me is two things.

No. 1, when the Secretary of Defense comes in front of this committee and says there's no change since last year, that troubles me greatly. He insisted there was no change, and we were showing him these 5-year shipbuilding plans; he says there's no change.

I admire folks who come up and say, we blew it, to tell you the truth. I don't mind that at all. Then we can look at the merits as to whether or not we ought to buy them now or buy them later.

So there's no problem in you're coming up here and saying, whoops, we goofed, we should have looked at inflation; we should have looked at toe-to-toe and heel-to-heel and we should have looked at two at a time, and we should have looked at all those other things. That's fine.

Now that one thing that troubles me is when the Secretary of Defense denies that anything has changed. The other thing that bothers me is when you claim savings that aren't real. Now $700 million is a lot of money. That's real. And so I'm not pooh-poohing or minimizing that kind of saving.

But we also are going to be costing ourselves some money if we delay other things in order to accelerate the carrier. Would you agree that's true?

Mr. **Pyatt**. Yes. Something in this—it's a fixed amount of money. Put something on something, and something else disappears, of course.

Senator **Levin**. Now, when we delay things, stretch out things, terminate things, which we're going to have to do to accelerate two carriers, what is that going to cost us in all those other systems, do you know?

Mr. PYATT. As we went through the lines in putting together what Admiral Smith has just described, we took a look at the various shipbuilding programs, for example, and saw that in the cargo variant of the LSD, slipping that ship a year was something we should do anyway in order to give a year's gap between the lead and follow ships. The DDG program, slipping a ship one way or the other was the cost of inflation, basically, from what we could see.

Senator LEVIN. I understand that's real cost here today. We're looking at inflation. That's a big part of your $3 billion.

Mr. PYATT. That is a real cost. You add that cost on. Sure, if we're going to compare it on one hand, we've got to compare it on the other.

Senator LEVIN. If you deduct all those other things you're talking about, what do you come out with, net? Under your figures, what do you come out with net?

Mr. PYATT. On the carrier?

Senator LEVIN. We save $3 billion, the way you look at things, including inflation, and all the other things you look at.

I want to know, when you add the cost of delaying those other systems, what do you net?

Mr. PYATT. I will have to go back and do those calculations on the net increase and inflation; we can do that.

Some of these other programs were basically programs that weren't as strong as the carrier. As the Admiral testified earlier——

Senator LEVIN. They weren't fat, waste, were they? You're not suggesting that the Navy just suddenly found this——

Mr. PYATT. Well, one of the things I testified earlier is, we turn in a budget, and we try to skim it down as much as we can, and some folks say, hey, you've gone too far.

But when I came back in a shipbuilding program, we are $6.8 billion under the President's budget, that is real money that hasn't been appropriated or has been applied to something else. So we tried.

Senator LEVIN. It would be useful to know what it costs us to move money from those other programs to the aircraft carrier.

Mr. PYATT. Yes, sir.

Senator LEVIN. There is a cost, and we ought to know, even under the Navy's definition of savings, what we save net. It is not enough just to look at gross figures that the Navy is trying to project or claim as savings.

And by the way, I think that the GAO's assessment is frankly a lot more realistic. There is no use looking at inflation and claiming that's a saving, because that's true with every single thing that we buy.

If we bought missiles this year instead of next year, we would save money, because presumably, there's going to be some inflation between next year and this year.

So the GAO has always discounted for inflation, and they've not accepted a number of other figures.

But at least using your own terminology and definitions, submit for the record, if you would, what you think you would save net as a result of this move to aircraft carriers.

Mr. PYATT. Sure.

[The information follows:]

AIRCRAFT CARRIERS

Mr. PYATT. The estimated savings associated with the proposed CVN-74/75 Aircraft Carrier adjustment is from $700 million to $3 billion.

Senator LEVIN. Now, I'm looking at what you call an internal memorandum, and I don't know how else to describe this. You know what I'm referring to?

Mr. PYATT. That's the PBD.

Senator LEVIN. Just one question on that. You look at a DDG-51 which you're delaying from 1990 to 1992, if I'm reading that correctly.

Mr. PYATT. That's correct.

Senator LEVIN. You pick up in 1990 $853 million, the way I read it, and when you build it in 1992, it only cost you $826 million.

My question is, why does it cost you less in 1992 to build a DDG-51 than it would have cost in 1990?

Mr. PYATT. We're seeing falling prices on ships along the learning curve. That's probably what that reflects.

Senator LEVIN. Is that true with aircraft carriers, too?

Mr. PYATT. Oh, yes. One of the reasons we wanted to continue the current construction process is, we expect to see more learning in the next one.

If we stopped and then restarted, we'd lose that learning. Newport News still has improvements they could make, and we would go after them.

Senator LEVIN. My time is up.

Admiral SMITH. Mr. Senator, there is an added issue there you should be aware of.

There could be a different number of ships in each of those years, so that the economic buy would drive that cost down.

Senator LEVIN. I thought that was one ship?

Mr. PYATT. It's one ship on a margin.

Senator LEVIN. I see.

Mr. PYATT. There are other ships, but I've forgotten the quantity.

Senator LEVIN. Thank you.

Senator KENNEDY. Referring to the same study in the areas of readiness and sustainability, $2.4 billion will come from these accounts in fiscal year 1988 through 1992.

That is shown in this December memorandum. Is the Navy in such good shape with regard to the readiness and sustainability it can afford to cut that kind of amount?

Admiral SMITH. Mr. Chairman, the Navy took a lot more than that out of those accounts, total, from the time we started the fiscal year 1988 budget drill, as I described earlier.

I think it is important to note that for these specific items you see on the Secretary of Defense's internal document, that those represent the lowest priority within the Navy's balanced program to make the decision to buy a higher priority item, because there was greater utility in the carrier purchases.

So we have looked at how to balance the program through each of the budget years, fiscal year 1988 and fiscal year 1989. And we took the lowest priority program, and reduced those in the recognition that the Secretary of Defense would need to balance his own program.

These were Navy dollars to pay for Navy carriers, not somebody else's dollars to pay for Navy carriers. And they were done within the context of our overall allocation within the President's defense budget.

MODERN MUNITIONS

Senator **Kennedy**. Well, this item obviously includes ammunition. And we had heard from Admiral Hayes, who stated he only had a few days' supplies of modern munitions, such as the radar guided Sparrow missiles. That was his testimony before our committee.

Admiral **Smith**. Yes, sir, I'm familiar with that.

Senator **Kennedy**. And now the Navy claims it can't afford to buy any of these 1,600 Sparrows it planned to buy this year.

How is it that you can afford to buy the carriers earlier than planned, when you can't afford to buy them the modern munitions?

Admiral **Smith**. The modern munitions that you speak of reflects the same budget decisions that we have been making in every area: sustainability; readiness; force structure; and modernization.

And that is a decision that says that if a new missile is coming along which has increased capability, there is a tradeoff as to when you stop buying the old missile and put your money into the new program.

And the Navy doesn't have enough money to buy everything that every commander feels he has to have. And so in that tradeoff decision, because there is a new generation missile——

SPARROW MISSILES

Senator **Kennedy**. Well, what changed again? You were going to buy 1,600 of those Sparrow missiles. You've stopped that. We've heard testimony from Admiral Hayes that he only had a few days' supply.

So what changed? You're in short supply at the present time. You planned to buy 1,600. You eliminated those.

Now what's the reason for it?

Admiral **Smith**. The reason—what Admiral Hayes is saying, the Congress has appropriated money in 1984, 1985, 1986, and 1987 for Sparrow missiles that are in the assembly lines, in the production lines, in the assembly sites in the Naval weapons stations that are not on the ships.

That's what Admiral Hayes is saying. And the total requirement of Sparrow missiles, the Navy's decision independent of buying the carriers was, that we should stop buying Sparrows and go to a new generation missile.

Senator **Kennedy**. Well, didn't the Navy know that when it indicated it wanted 1,600 earlier in the year? It wanted 1,600 more, and then you eliminate those.

They must have known that all of those were in the pipeline before, did they not?

Admiral **Smith**. We know those were in the pipeline, yes, sir.

Senator KENNEDY. Well, why did you request the 1,600 then in what was submitted previously?

Admiral SMITH. The 1,600 was in the Navy's program plan from the prior year. And each year it isn't just that we add carriers. We add other things.

We added Tomahawk missiles in this year.

Senator KENNEDY. Well, I'm just confused over why you knew that it was necessary or you were recommending it to us only several months ago, and then now, you are eliminating them. And the reason for it is because you have all of these in the pipeline over the period for the monies that were appropriated in the last three years.

It seems to me that kind of information you would have had prior to the time you made the request just a few months ago.

Admiral SMITH. Yes, sir, we knew which missiles were in the pipeline. We know how many missiles have been authorized and appropriated by the Congress.

And we know what our long term, or total requirement for those missiles would have to be.

We also realized that new missile systems were coming along.

Senator KENNEDY. Are you talking about the AMRAAM?

Admiral SMITH. Yes, sir.

Senator KENNEDY. When is that coming on?

Admiral SMITH. I believe that is 1991-1992. It has slipped since this decision was made.

Senator KENNEDY. Well, then, what are you prepared to tell us, if it's not for four more years? Do you want us to reconsider?

Admiral SMITH. No, I'm prepared to say that in the 1987 buy of the Sparrow missiles, there was enough of a savings that we could buy 335 additional.

And we're coming to you with a reprogramming this week which will request those additional buys because of the contract saving, and that offsets that number that you see there by the 335.

Senator KENNEDY. When does the Sparrow line close down?

Admiral SMITH. I can provide that for the record to you, sir.

[The information follows:]

The Sparrow line is scheduled to close down in fiscal year 1988 however, due to uncertainties associated with potential FMS sales the line could be extended beyond that date.

Senator KENNEDY. Would you be surprised if it were this year? Does that make sense?

Mr. PYATT. We won't close this year. We have another year to buy. We have money and another year to buy.

Senator KENNEDY. And that is the end of it?

Mr. PYATT. That is the end of it.

Senator KENNEDY. So they close out the Sparrow, and the AMRAAM would not be in for 4 more years, as I understand it.

Mr. PYATT. Three more years subsequent to the closure.

Senator KENNEDY. Three years subsequent. But then the Sparrows are down. And the AMRAAM, which has already slipped a bit in terms of our current projections, they may be on line?

Mr. PYATT. The Air Force has backed out of Sparrow completely now.

Senator KENNEDY. Well, you had it in there yourself. I'm just talking about things you requested and changed.

Mr. PYATT. I understand.

Senator KENNEDY. My time has expired.

Senator Levin.

Senator LEVIN. Mr. Chairman, I just have a few more questions. Is the Navy still claiming $3 billion in savings despite the GAO testimony that there's only $700 million?

Mr. PYATT. The $3 billion figure is a number between a program contained in an EPA-extended planning annex of some time ago, and the current program.

That's all that $3 billion is. As I tried to describe, you know, the uncertainties involved in making an estimate like this, they're large. How you approach an economic order quantity. How you approach inflation. How you approach control of configuration changes.

All those inject uncertainty. The number, I believe, is some place between $700 million and $3 billion.

Senator LEVIN. Somewhere between $700 million and $3 billion?

Mr. PYATT. That's where it will wind up.

Senator LEVIN. The Navy is now claiming a range of between $700 million and $3 billion; is that fair?

Mr. PYATT. I believe with all the uncertainties involved in putting these things together, it is likely to fall out, the $3 billion. It is likely to be someplace in between.

Senator LEVIN. Is it fair to say the Navy is claiming a range of savings between $700 million and $3 billion?

Mr. PYATT. It's at least $700 million, yes.

Senator LEVIN. But it's somewhere between those two figures?

Mr. PYATT. It depends upon your basis.

Senator LEVIN. I'm asking what the Navy's claiming.

Mr. PYATT. Everytime you make a cost analysis, it is subject to a lot of assumptions.

Senator LEVIN. Is the present best estimate by the Navy that the savings will be somewhere between $700 million and $3 billion?

Mr. PYATT. Yes.

Senator LEVIN. That is a lot different than what we were told just a few months ago here, where there was just a claim of $3 billion.

I'm glad you're amending it. I'm not giving you a hard time.

Mr. PYATT. It sounds like it.

Senator LEVIN. I'm glad you're phrasing it that way. I think it's a lot more careful than just a claimed $3 billion.

Mr. PYATT. Then I will turn to our record in buying ships, and we've always done better than the budget.

Senator LEVIN. You had a 5-year shipbuilding program last year which showed, to the best of our computations, that you were going to buy 85 ships; you were going to have a new construction of 85 ships for the years 1987 to 1991, during that 4-year period.

Your new 5-year plan shows 80 ships instead of 85 ships during that 4-year period. Does that sound right?

Mr. PYATT. I assume it is, yes.

Senator **Levin**. On conversion SLEPs and reactivations, it shows during that 4-year period 10 instead of last year's 5-year plan projection for that same 4-year period of 17. Does that sound right?

Mr. **Pyatt**. Yes, I will assume it is.

Senator **Levin**. Would you confirm those figures for the record, for us?

Mr. **Pyatt**. Yes.

[The information follows:]

NAVY SHIPBUILDING PLAN CONVERSIONS

	Fiscal year—			
	1988	1989	1990	1991
Fiscal year 1988–89 5-year plan:				
CV (SLEP)	1			1
TACS	2	2		
AO (Jumbo)	1	2	1	
Total	4	4	1	1
Grand total (fiscal years 1988–91)				10
Fiscal year 1987 5-year plan:				
CV (SLEP)	1			1
TACS	2	2		
AO (Jumbo)	1	1	2	
LPD (SLEP)		1	3	3
Total	4	4	5	4
Grand total (fiscal years 1988–89				17

Senator **Levin**. Assuming that those figures are right, the bottom line is this: We've got a new 5-year shipbuilding plan which shows five less ships for 1988 to 1991, and seven less conversions and SLEPs for the same 4-year period.

Is it fair to say that at least some of that is the result of accelerating the funding of the aircraft carriers?

Mr. **Pyatt**. The exact ones that are related to the aircraft carriers are in the PBD that you have.

Admiral **Smith**. That's two ships.

Senator **Levin**. Two ships?

Admiral **Smith**. Only two ships.

Senator **Levin**. Now, what is the cost for the other ships being knocked out?

Mr. **Pyatt**. I don't recall which ones changed exactly.

Senator **Levin**. If you could, and it's too technical to go into here, but could you give us, for instance, the reason why there is a reduction in the SLEP of the landing platform ships in 1990 and 1991.

[The information follows:]

The only significant difference in conversions between the four fiscal years common to the FY 87 five year plan and the fiscal year 1988/89 5-year plan is the deletion of the LPD (SLEP) program. Based on the material condition of the LPD ships and the progressive overhaul/availability maintenance of fleet oilers and other auxiliaries that have successfully served 40 or more years without a formal Service Life Extension Program (SLEP), we concluded that LPD ships could serve extended lives with progressive overhaul/availability maintenance and without a formal SLEP. We therefore deleted the LPD SLEP from our 5-year plan early in the fiscal year 1988/89 budget development process. The aircraft carrier replacement program beginning with long lead procurement funds in fiscal year 1988/89 did not affect the LPD SLEP decision.

Mr. PYATT. I can talk about that one.

Senator LEVIN. Rather than doing it now, if you could go through each of them and tell us for the record what the reasons are for all of those other changes.

Mr. PYATT. It is just two ships.

Admiral SMITH. Just two ships. That is all the internal document shows, just two ships.

Senator LEVIN. A lot of what you said here frankly I'm glad you said and I have no difficulty with it. I'm glad you said there was a change. I'm glad you said why.

I'm glad you said the issue basically is whether we save more doing this than doing that. I think those are the right issues. And so I agree with much of what you have said.

But one of the things I disagree with is, where you have assumed that the future Congress is not going to authorize two carriers, but that this Congress will. That is $1.1 billion of your savings, of your $3 billion savings. Your economic order quantity is a billion-one. That is over a third of those savings.

What makes you believe that this Congress would authorize an economic order but that the future Congress would not? Why assume that?

Mr. PAYTT. I'm not trying to be presumptuous of the Congress. I'm saying that this opportunity at this time, this Congress has the opportunity to make that decision.

Senator LEVIN. So does a future Congress. I mean, you're assuming in your savings here up to $3 billion now, if the range is something I think is a more accurate assessment.

You're assuming—you're assuming—that the future Congress won't order in economic order quantities, but that this Congress will. And I don't know why.

Mr. PYATT. That's the reason I make it a range. You could take a billion-one off.

Senator LEVIN. A billion here, a billion there.

Mr. PYATT. That adds up. That's what Mr. Dirksen said. But that's the reason why I think the accurate way to approach the problem is to understand the pieces.

And they're all significant.

Senator LEVIN. Well, I think that is the weakest part of the analysis. I think you've got to operate on the same assumption. You've got to assume that this Congress and future Congresses are going to behave the same way, either wisely or foolishly or whatever.

But you can't, just for the purpose of extending the ceiling on your range to $3 billion, assume that a future Congress is going to order them one at a time, and this Congress is going to order them two at a time.

Mr. PYATT. The predominance of history is orders one at a time.

Senator LEVIN. Well, then you've got to assume that now.

Mr. PYATT. Okay, we'll assume it now. So it's a billion more onto the cost of the aircraft carrier.

Senator LEVIN. Okay, on that point, you don't have this $700 million savings.

Mr. PYATT. No.

Admiral **Smith**. There's another point that I think——

Senator **Levin**. Consistency, is what I want.

Admiral **Smith**. I think there are two other points that have to be factored in here. One is that the current budget was a conscious decision to request the two carriers heel-to-toe. That was a conscious decision, as opposed to what the extended planning annex showed as a matter of historical fact, ordering them one at a time.

Now, if the two carriers now heel-to-toe are procured heel-to-toe, we see a tremendous savings, whatever that number is. If we don't procure carriers now heel-to-toe, and we wait until 1994 or 1994 and 1996, when there's no skilled workforce, then there's no advantage to the heel-to-toe to the magnitude you see now, and you may end up one at a time because that's all the system can bear.

One of the reasons for the acceleration decision was the recognition that as the top line comes down and the priorities of the carrier stand out even more starkly, that you've got to bite the bullet now or you may not be able to bite it in 4 years.

Senator **Levin**. Okay, just one additional question.

The Navy's view of the need for 15 carriers I take it has been a constant over the last few years?

Mr. **Pyatt**. Yes, sir, because the second of the earlier two carriers was to build to a 15-carrier force.

Senator **Levin**. But the Navy's been steady in its view that we need 15 carriers, last year, the year before, the year before that?

Mr. **Pyatt**. Yes.

Senator **Levin**. And when we had last year's 5-year shipbuilding plan, the assumption on the part of the Navy was that we would have a 15-carrier Navy but we wouldn't have to start replacing them until 1992 and 1994, is that correct?

Mr. **Pyatt**. Yes, that's correct.

Senator **Levin**. So that you can be for a 15-carrier Navy, presumably, without funding carriers during this 5-year program, just the way the Navy was for a 15-carrier Navy without putting funding in last year's 5-year shipbuilding program?

Mr. **Pyatt**. We just recognized our mistake and moved them earlier.

Senator **Levin**. I understand that. But you would concede, I presume, that people who support a 15-carrier Navy, can support a 15-carrier Navy without any money during this 5-year period?

Mr. **Pyatt**. As long as you recognize all that goes with it. The things that we were unwilling to accept in terms of carrier age, and we discussed those things.

Senator **Levin**. So is the answer then that you are willing to agree that people can support a 15-carrier Navy without any money during this 5-year program?

Mr. **Pyatt**. We couldn't come to that conclusion.

Senator **Levin**. Well, you did come to that conclusion.

Mr. **Pyatt**. We came to the conclusion that if we really supported a 15-carrier Navy, we had to build the carriers now to be able to assure we maintained it.

Senator **Levin**. In other words, you weren't really for a 15-carrier Navy a year ago, that was just——

Mr. **Pyatt**. No, no, no.

Senator **Levin**. You obviously were for it, weren't you?

Mr. **Pyatt**. Of course. But when we looked at the profile that we put together that built carriers in the nineties, we saw that we weren't likely—that it was not likely to be a real plan.

Senator **Levin**. It's greater assurance that you will have a 15-carrier Navy if you pay for them now.

Mr. **Pyatt**. Yes, sir. Absolutely.

Senator **Levin**. But you can also, presumably, honestly be for a 15-carrier Navy and not put the funding in now, keep it the way you folks projected it 6 months ago. Am I right?

Mr. **Pyatt**. Yes, of course. But then we realized we had a 56-year old *Midway* we were trying to deploy, and that was a problem.

Senator **Levin**. But I presume your 5-year plan was adopted in good faith a few months ago, wasn't it? That October, 1986 plan was a good faith 5-year plan?

Mr. **Pyatt**. At the time we put it together, we thought it was right, and discovered something else.

Senator **Levin**. But it was a good faith plan?

Mr. **Pyatt**. We try to do our work as best we can.

Senator **Levin**. No, I think you should. And by the way, I don't want to keep telling you you shouldn't change. I just want to make sure that everyone understands that the issue here isn't whether you're for a 15-carrier Navy.

The question is whether or not we can afford to accelerate the funding of those two carriers. The savings are there, whatever the amount is, by the way. We can argue. It may be $300 million. It may be more.

But they're there. There's obvious saving. Anyone who says there's no savings, it seems to me, is closing their eyes to the obvious.

But the point is, I would hope the Navy would argue the savings of proceeding now, and the assurance that it gives to a 15-carrier Navy, rather than saying that the issue is whether you're for a 15-carrier Navy.

Because that's not the issue.

Mr. **Pyatt**. Excuse me. I thought when it came in, that was a given, that your issue was how do we—the issue you just raised, of how do we finance it, and what's the timing.

Senator **Levin**. Not whether you're for it or not?

Mr. **Pyatt**. You said that was solved in the last hearing in your mind.

Senator **Levin**. Then you would agree, then, it's not whether you're for it or not; it's whether we fund it now and give greater assurance that it's coming into existence?

Mr. **Pyatt**. It's a degree of assurance of how much you want to rely on some old ships.

Senator **Levin**. Well, I don't see any other colleagues who want to ask questions.

Both of you have been very helpful and very patient, and it is a difficult issue. We obviously are acting under terrific constraints, and probably beyond that which we contemplated.

I mean, I don't know what the budget committee is going to do, folks, but the plea of Senator Gramm here that we get some guidance from the services as to how we carve up a reduced pie it seems to me is one which we have all been making.

I know we're not happy with, or you're not happy with it, but there it's going to be. It may not be. We don't know what the figures are. But it is going to be there.

So whatever guidance you can give us when you get that number will be appreciated. Frankly, I know it has usually got to come in directly, and all the rest.

But it would be very helpful if we had that guidance.

Admiral, I must disagree with you on only one thing that you said. Those weren't the Navy dollars. That's the only thing I really think I disagree with you on. Those weren't Navy dollars that you're moving from one thing to another.

Those really were taxpayer dollars. Other than that, I know you have a lot of pride, and you're possessive of them, and that's the way it should be, so I'm not being critical of you.

But I do think we all ought to be aware what we're talking about here is priorities, taxpayer dollars, and how they can best be spent.

As far as the rest of your presentation, I do agree with you that there are some real savings here, and the amount of savings is really what we have to assess, and what the costs are in other programs that we are delaying or deferring or terminating prematurely also has to be assessed.

That should be a dollar computation, because that's what it comes down to. It's not a philosophical computation. I think you'll find almost all of us on the committee that believe that we should have a 15-carrier Navy.

Thank you, again.

[Questions for the hearing record with answers supplied follow:]

QUESTION SUBMITTED BY SENATOR EDWARD M. KENNEDY

SCN BUDGET

Senator KENNEDY. Secretary Pyatt, one of the other disturbing things which came to light in reviewing the SCN budget submission was that other things had changed from the fiscal year 1987 FYDP to the fiscal year 1988 FYDP. Notably, a number of ships which were in your fiscal year 1987 submission curiously failed to appear at the same priority level or even at all in the fiscal year 1988 submission. I refer specifically to (from the fiscal year 1987 FYPD):

One 688 submarine from fiscal year 1989;
One LSD 41 cargo variant from fiscal year 1989;
Two DDG 51 destroyers (one from fiscal year 1990 and one from fiscal year 1993);
One AE ammunition ship from fiscal year 1989; and
Nine LCAC assault air cushion vehicles from 1988.

As with my previous question, there are other examples, but I will leave it here. My question is this—what has changed from fiscal year 1987 to fiscal year 1988? The threat? Do we have a less critical destroyer shortfall? Is the submarine picture any better than it was last year so that we can do with one less 688? Or did these priorities change in order to accommodate the aircraft carrier funding?

Secretary PYATT. The threat certainly has not changed; if anything, the threat is more demanding now than last year. Also, recent events in the Persian Gulf clearly show the need for increased air power at sea. What has changed is congressional willingness to provide funds to meet the threat. As a result of last year's budget deliberations and reductions in funds appropriated to the Navy, we had to adjust our fiscal year 1988/89 budget request and 5-year plan to lower levels than we had suggested in the fiscal year 1987 5-year plan. The result of these funding reductions was deferral of ships to later years than we had originally planned in the fiscal year 1987 5-year plan. As clearly shown in the Program Budget Decision (PBD) document that established the aircraft carrier replacement program in the fiscal year 1988/89 budget request, only two ships were affected by the aircraft carriers. One fiscal year 1990 DDG 51 was moved to fiscal year 1992 (and the cost savings resulting from the new CG 47 buy-out strategy may allow this ship to return earlier, if the buy-out strategy is successfully implemented). One fiscal year 1990 LSD 41 Cargo Variant was moved to fiscal year 1991 which was a good business decision in any event to avoid the production gap that would have occurred between two ships in fiscal year 1990 and two ships in fiscal year 1992. The aircraft carrier replacement program had minimal effect on the 5-year shipbuilding program, particular in comparison to the effect caused in response to congressional funding reductions on the fiscal year 1987 budget.

5-YEAR DEFENSE PLAN

Senator KENNEDY. RADM Smith, in reviewing the 5-year defense plan (FYDP) as presented for the fiscal year 1987 budget and comparing it with that presented for the fiscal year 1988/89 budgets, I note that a number of things have changed with respect to the estimated prices of certain ships. Many ship costs as presented in the budget request are dramatically lower for fiscal year 1988/89 than they were for fiscal year 1987. Briefly, according to your own figures in the procurement documents:

Ohio SSBN's will cost $176.8 million less in fiscal year 1988 and $145 million in fiscal year 1989.

DDG–51 destroyers—$156.1 million less in fiscal year 1988 and $277.7 million in fiscal year 1989.

LHD–1 Amphibious ships—$307 million less in fiscal year 1988 and $239.9 million in fiscal year 1989.

There are others and I could go on. The point is this, at a time when we are reading about potential cost over-runs and slipped schedules for the CG–47 cruisers and the DDG–51 destroyers, how can you estimate these ships to be costing less? What has changed from fiscal year 1987 to fiscal year 1988?

Does it have anything to do with the need to accommodate the two aircraft carriers in the SCN account?

Secretary PYATT. The examples cited, i.e.; Trident, DDG and the LHD, as costing less in this year's 5-year shipbuilding plan as compared to last year's plan are by no means whatsoever related to the CVN acquisition. There are specific reasons for the pricing reductions associated with each program. For example, Trident is priced as a competitive program in the fiscal year 1988 budget rather than a sole source award in the fiscal year 1987 budget. Also, fiscal year 1988 represents the second year of production for the follow-on or second source builder of the DDG–51 program. The price for the two fiscal year 1988 DDGs reflects a competitive shipbuilder award, while fiscal year 1989 continues the incorporation of competition and also anticipates savings associated with the second sourcing of the Aegis Weapon System. As for the LHD, the contract for the fiscal year 1986 ship was awarded last year as an annual procurement with options for fiscal year 1988 and fiscal year 1989. The significant price reduction is attributed to the intense competition for the three ship package.

[Whereupon, at 4:30 p.m. the hearing was adjourned.]

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